SUUNNY

SUUNNY UNIVERSAL FREQUENCY INVERTER

SU4000 SERIES
USER'S MANUAL
200V: 0.4~2.2kW; 400V:0.75~300kW

Please read the manual carefully before you use our products!

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A、PREFACE

Thanks for choosing SU4000 series universal frequency inverter.
SU4000 series characterise as samll in shape and easy operation.
It applies current control to get high precision and extreme moment of force.
This user's guide shows you how to operate and maintain SU4000 series.
Please read carefully before operating.

SUUNY GROUP LIMITED

CAUTION

- For easy understanding, all the cover is removed in the figures inside this guide book. Please put the cover as they should be when operating.
- If any improvement or specification modification occurred, a revised editon will be published.
- If the guide book is broken or lost, you can order from your distributer or the nearest supplier.
- Our quality guarantee automatically become invalide upon any change by buyer.

1、 OPENING THE PACKAGE

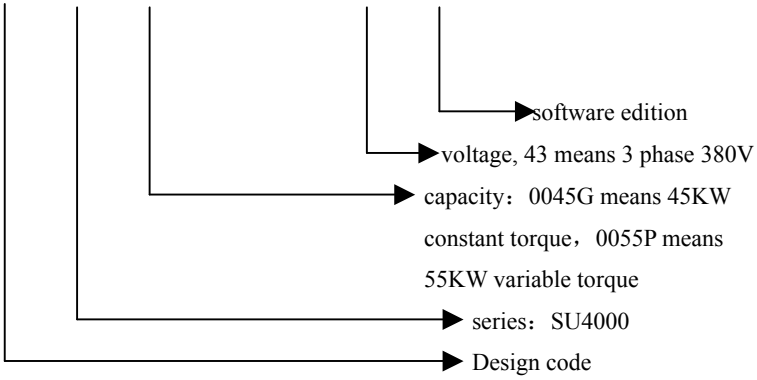
Check the following when opening the package：

- ●No broken on the package in transportation
- ●The rated value on the data plate same as ordered
- ●Contact your supplier if you have any problem

2、CONTENT AND MEANING OF THE DATA PLATE

MODEL:SU40045G0055P43A INPUT:3PH380V50Hz OUTPUT:3PH380V128A98KVA Freq-Range:0.1~400Hz
SER NO: New Trend Electrical Appliance Group Co., Ltd.

MODEL: SU 4 0045G0055P 43 A



B、CAUTION

ONLY INSTALL BY QUALIFIED PERSONNEL

For your safety,please pay special attention to the following figures.

DANGER： May cause death or heavy injury if operate against the guide book

ATTENTION： May cause injury or materialloss if operate against the guide book

1、INSTALLATION		
	1	Please install on metal or unflammable surface to avoid fire.
	2	Far from any flammable material to avoid fire.
	3	Don’t install in places with explosive gas to avoid explosion.
	4	Don’t press the cover and the control panel to avoid injury or damage.
	5	Install on the surface strong enough to hold the inverter to avoid any loss or injury.
	6	If there is any broken or component missing,please don’t install the inverter to avoid fire to injury.
	7	Screw,metal ring that falls into the inverter may cause fire or materialloss.
	8	Don’t intall in places with waterpipe and water shower to avoid possible damage and loss.

2、CIRCUIT

1	Connect wire by qualified personnel to avoid electric shock.
2	Shut off the input power before connecting wire to avoid electric shock.
3	Connect the groud wire properly to avoid electric shock.

1	Don’t confuse the input and output terminal.
2	Don’t connect terminal P and N directly.
3	Connect the main circuit terminal to the wire head tightly.
4	The naked joint of wire head and main circuit terminal should be wrapped tightly.

3、ELECTRIFICATION

1	Put the inverter cover on before power is on .
2	Voltage regulator is needed to improve the voltage for inverters Stored over 2 years.
3	Don’t touch the inverter when power is on.
4	Don’t operate the inverter by wet hand.

4、MAINTENANCE

1	Maintain the inverter 10 minutes after power is off, be sure it is under 36V with the positive and negative wire.
2	Change components only by professional personnel, don't forget any wire ends or metal material inside.
3	After changing the control panel, modify the control data before power is on.

5、OTHERS

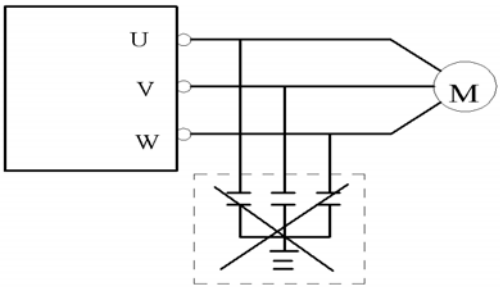
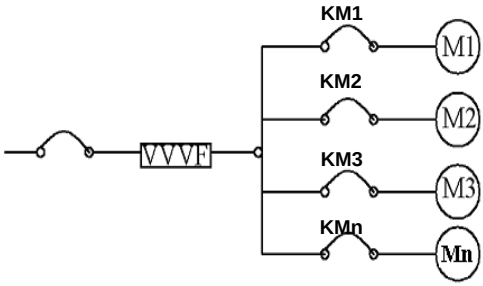
1	Any change without our permission is dangerous and forbidden.
2	Abandoned inverter should be treated as industrial waste, burning may cause explosion and is forbidden.

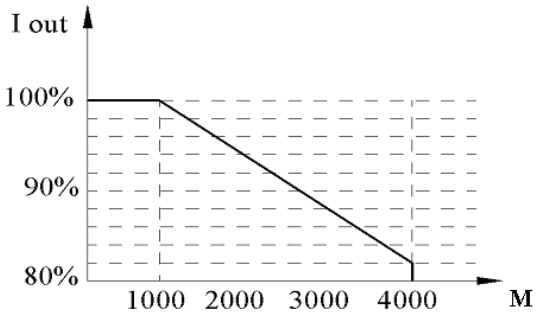
6、MECHANICAL LOAD CAPACTTY

1	**Because of poor heat rediation,low down the rotation moment of force.**
2	**inverter provides overheat protection to the matching motor.If the motor doesn't match to the inverter rerelated value,adjust the value to ensure the motor safety.**
3	**Besides the viberation and big noise,check and confirm the speed limit of the motor ring and mechanicla equipment when inverter running over 50 HZ.**
4	**When rising load,negative rotation moment will occour and because of over flow and high voltage,inverter will turn off.** **In this occacion break component is necessary.**

	5	**Unstable current flow occours when inverter running by reciprocating motion. Running frequency over 20 Hz is recommended for long time low frequency operation.**
	6	**Within certain output frequency,it will possibly reach the mechanical resonance point.Setting jumping frequency to avoid it.**
	7	**Motor unit is forbidden to conncet or disconnect with the running inverter,otherwise inverter will turn off by over current flow or the main circuit will take fire.**
	8	**On problem-resume mode,inverter will restart automatically.** **Stay away from the motor unit to avoid accident.**
	9	**Inverter runs from low speed to high speed quickly,check the speed limit of the motor unit.**
	10	**Disconnect motor unit to inverter when checking motorwire.**
	11	**Check it's safe before changing the motor retation way.**
	12	**Don't connect the motor terminal to the main circuit.**
	13	**The utmost running speed of the motor must be set according to the motor and the equipmint connected to it.**
	14	**Before running,check the motor is installed properly and motor uint matching the motor.**
	15	**Connect SU4000 inverter groud terminal to ground conductor.**

7、ABOUT INVERTER

1	Inverter output pulse wave, capacitor or anti-thunder resistance on the output side will cause inverter turn off or damage.Remove the capacitor or resistance, please see the following figure. 
2	SU4000 inverter series can only be used within the permitted working voltage limit.Please use voltage regulator to increase or decrease the working voltage if inverter works ouside the voltage limit.
3	With the overflow protection device,inverter can protect itself from inductive thunder.
4	When one or more motor connected to inverter, motors can not bear reciprocating motion. Otherwise, every motor needs over flow protection device due to the unstable cause.  KM1～KMn chosed should match with the rated value of motor M1～KMn Inverter can not protect a particular motor.

5	In area above 1000 meters sea level, thin air cause poor heat radiation. Low down the rated voltage according to the sea level as shown below: 
6	Any test to the inner inverter circuit is not allowed when power off.
7	When power is on, inverter control component is electrized and deadly dangerous.Keep the control component away from the main circuit.
8	When power is on, U,V,W of motor connecting terminal and direct current bridge -/+ terminal of breaker resistance is electrized though the motor stopped.
9	Though the terminal I/O of control is apart from power and inverter is power off, the relay output terminal and other I/O terminal may still carry dangerous voltage.
10	Inverter has high permitive discharge current.
11	If inverter used as a part of a machine,the machine mill must supply the main circuit switch.
12	Only use spare parts supplied by us.
13	SU4000 inverter must be fixed installed.
14	Don’t attempt to test the voltage limit of any component of SU4000 inverter.They need special testing procedures.If neglected,it may lead to damaging result.

C、SPECIAFICATION

1、INDIVIDUAL DATA SHEET

TYPE	INPUT VOLTAGE	POWER/ KW	DRIVE CAPACITY (KVA)	OUTPUT CURRENT/A	MOTOR/ KW
SU400D4G23A	Single/three phase 200V 50Hz	0.4/-	1.0	3.2/-	0.4/-
SU40D75G23A	Single/three phase 200V 50Hz	0.75/-	2.0	6/-	0.75/-
SU401D5G23A	Single/three phase 200V 50Hz	1.5/-	2.4	8/-	1.5/-
SU402D2G23A	Single/three phase 200V 50Hz	2.2/-	3.7	11/-	2.2/-
SU40D75G 43A	Three phase 400V 50Hz	0.75	2.6	3.4	0.75
SU401D5G 43A	Three phase 400V 50Hz	1.5	3.7	4.8	1.5
SU402D2G 43A	Three phase 400V 50Hz	2.2	4.2	6.2	2.2
SU403D7G 43A	Three phase 400V 50Hz	3.7	6.6	8	3.7
SU405D5G07D5P43A	Three phase 400V 50Hz	5.5/7.5	11/14	14/18	5.5/7.5
SU407D5G0011P43A	Three phase 400V 50Hz	7.5/11	14/21	18/27	7.5/11
SU40011G0015P43A	Three phase 400V 50Hz	11/15	21/26	27/34	11/15
SU40015G18D5P43A	Three phase 400V 50Hz	15/18.5	26/34	34/41	15/18.5
SU418D5G0022P43A	Three phase 400V 50Hz	18.5/22	31/40	41/52	18.5/22
SU40022G0030P43A	Three phase 400V 50Hz	22/30	40/50	52/65	22/30
SU40030G0037P43A	Three phase 400V 50Hz	30/37	50/61	65/80	30/37
SU40037G0045P43A	Three phase 400V 50Hz	37/45	61/73	80/96	37/45
SU40045G0055P43A	Three phase 400V 50Hz	45/55	73/98	96/128	45/55
SU40055G0075P43A	Three phase 400V 50Hz	55/75	98/130	128/165	55/75
SU40075G0090P43A	Three phase 400V 50Hz	75/90	130/153	165/185	75/90
SU40090G0110P43A	Three phase 400V 50Hz	90/110	153/170	185/224	90/110
SU40110G0132P43A	Three phase 400V 50Hz	110/132	170/211	224/260	110/132
SU40132G0160P43A	Three phase 400V 50Hz	132/160	211/230	260/302	132/160
SU40160G0185P43A	Three phase 400V 50Hz	160/185	230/260	302/340	160/185
SU40185G0220P43A	Three phase 400V 50Hz	185/220	260/340	340/450	185/220
SU40220G0250P43A	Three phase 400V 50Hz	220/250	340/360	450/470	220/250
SU40250G0280P43A	Three phase 400V 50Hz	250/280	360/390	470/520	250/280
SU40280G0315P43A	Three phase 400V 50Hz	280/315	390/460	520/605	280/315
SU40315G0350P43A	Three phase 400V 50Hz	315/350	460/520	605/640	315/350

2、TECHNICAL DATA

SERIES		SU4000
Input	rated voltage frequency range	400V/50Hz/60Hz，voltage：±15%；frequency：±5% 200V/50Hz/60Hz，viktage：±15%；frequency：±5%
Output	Rated voltage	three：400V phase：200V
Control characteristic	Control way	SVPWM VOLTAGE VVC
	Control mode	V/F control/noninductively current control
	frequency range	0.1 ~ 400Hz
	Frequency precision	digital：±0.01%(－10℃~ ＋40℃)
		analogue：highest frequency× 0.2%Hz (25℃ ±10%)
	Frequency setting	digital：0.01 Hz
		analogue：highest frequency × 0.1%Hz
	Output detinition	0.01 Hz
	Over load capacity	general type：150% of rated output current per minute exhaust fan,water pump:120% of rated output current per miniute
	Frequency setting signal	0～＋10V(20kΩ), 4～20mA（250Ω）
	Speed up and down	0.0～3600second（setting speed up and down seperately）
	Brake rotation moment	125%with braking resitance,20%without
	V/f mode	15 presetting VF and programing VF
Protection function	Overload protection	electronic overheat relay protection
	Instantaneous over current flow	general typeG:250% of inverter rated current flow exhaust fan,water pumpP: 200% of inverter rated current flow
	Over load	general typeG：motor stops after 1 minute of 150%rated current flow exhaust fan,water pumpP:motor stops after 1minute of 120% rated current flow .
	Over voltage	rectifier output 380V(200V grade)/760V(400V grade) or lower,motor stops.
	Low voltage	rectifier reduce output to 190V(200V grade)/380V(400V grade)or lower, motor stops.
	Instantaneous power off	instantaneous power off over 15 ms or over, stop running it keep running when instantaneous power off less than 2 second.
	Radiator overheat	thermal resistance protection.
	Speedless protection	speedless protection during constant speed or speed up and down.
	Grounding problem	protected by electronic circuit.
environment	Temperature humidity	－10℃～＋40℃，90% relatively.
	place	Indoor (avoid dust and corrosive gas).
	elevation	below 1000 meters.
	vibration	below 0.5G

D、INSTALLATION

1、PLACE TO INSTALL

INSTALL SU4000 IN THE FOLLOWING PLACES

※Don't hesitate to contact us or your supplier if you need special installation.

2、INSTALLATION

DISTANCE：

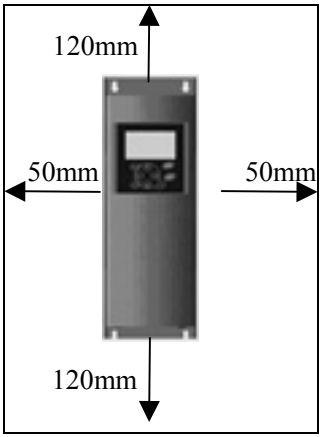


Figure 4-1 installation distance

If two inverter installed one onto the other, a guide plate is necessary, as figure 4-2：

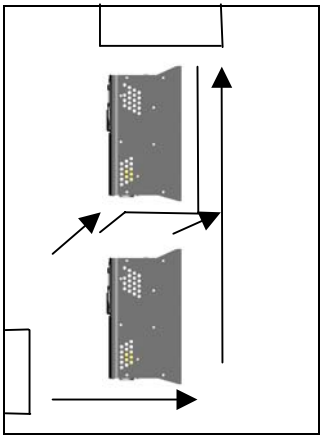
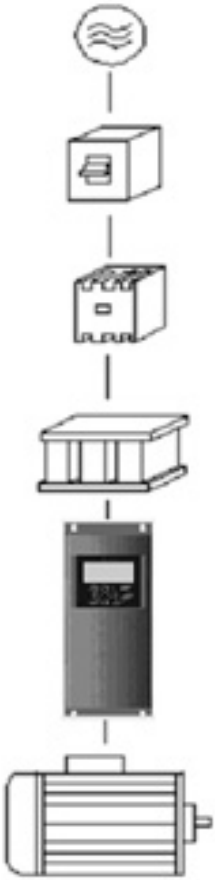


Figure 4-2 install more than 2 inverters

E、WIRING

1、Main circuit wiring：



Power： pay attention to the voltage

No fuse switch： see relative figure

Electricity leakage protection switch： anti infrasonic wave

Magnetic toucher： don't use magnetic toucher as inverter switch

Alternative reactor： alternative reactor is necessary when output capacity is over 1000KVA

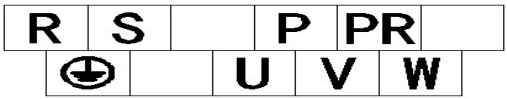
Inverter： 1、connect main circuit and signal wire correctly.
2、set inverter data correctly.

Motor： 1、check motor data and the machinery loading capacity.
2、if running under low speed for long time, please use inverter special motor.

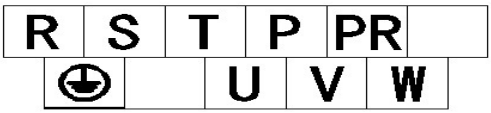
2、CONNECTING TERMINAL

（1）、Main circutt terminal

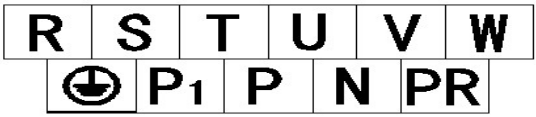
●SU400D4G23A—SU402D2G23A Main loop connecting terminal



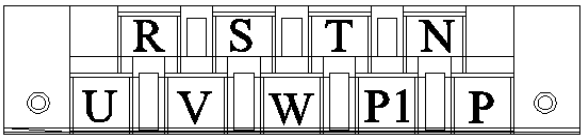
●SU40D75G 23A—SU403D7G 43A Main loop connecting termainal



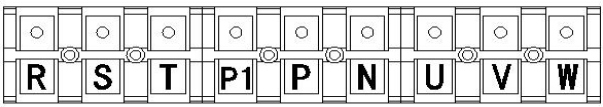
●SU405D5G07D5P43A—SU40022G0030P43A Main loop connecting termainal



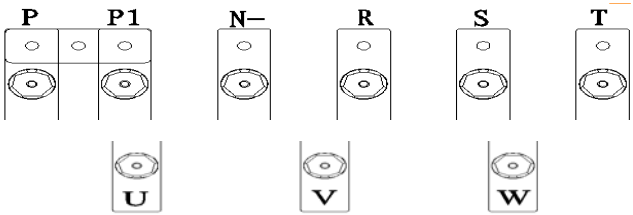
●SU40030G0037P43A—SU40055G0075P43A Main loop connecting termainal



●SU40075G0090P43A—SU40090G0110P43A Main loop connecting termainal

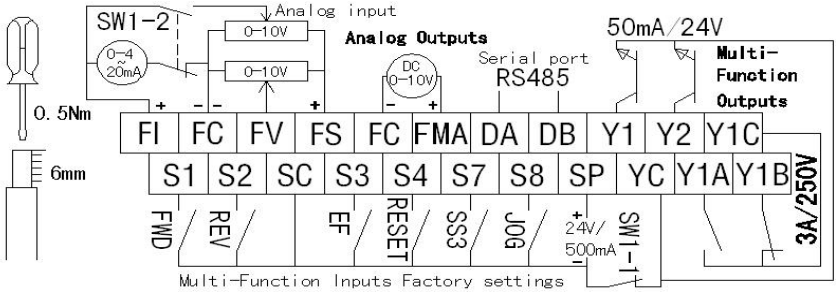


●SU400110G0132P43A—SU400315G0350P43A Main loop connecting termainal

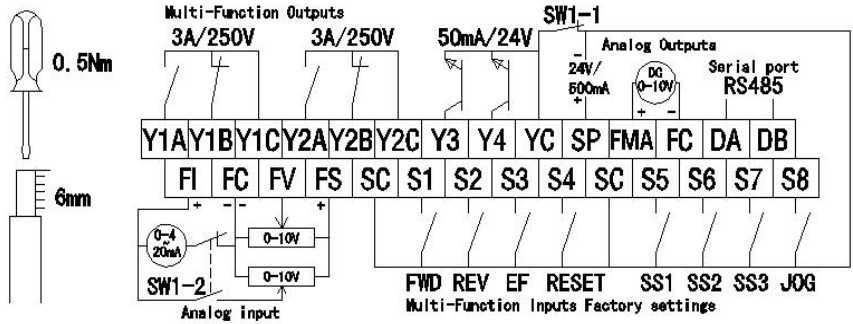


(2)、Control terminal order

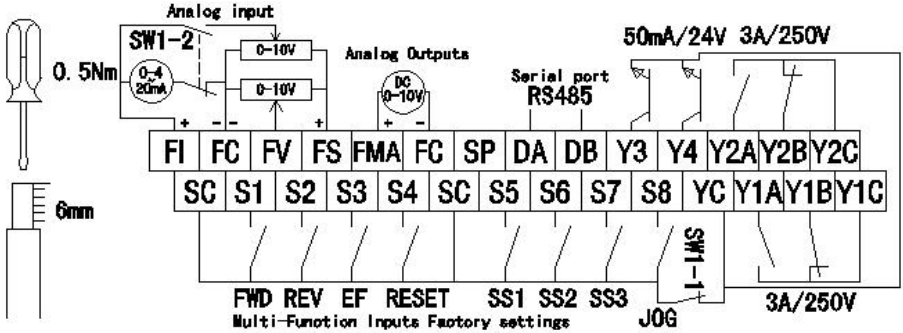
●SU400D4G23A—SU403D7G43A Control terminal



●SU405D5G07D5P43A—SU40055G0075P43A Control terminal

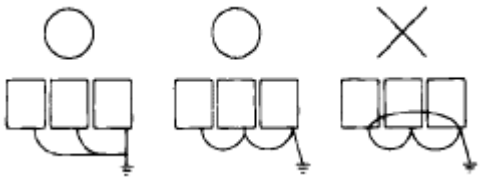


●SU40075G0090P43A—SU40315G0350P43A Control terminal



（3）MAIN CIRCUIT TERMINAL

SYMBOL	ILLUSTRATION
R S T	**Connect to single/three phase alternative power** ●Main circuit terminal L1/R,L2/S,L3/T is connecting to single/three phase slternative power through protective circuit breaker or leakage protecting breaker.Neglect phase order when connecting to 3 phase power. To cut off power and avoid accident when inverter protection power is on,a magnetic toucher connecting to the circuit is necessary. ●Don't use main circuit ON/OFF switch to start and stop inverter. Use circuit control terminal S1,S2 or START/STOP button on the control panel to start and stop inverter.If you must use main circuit ON/OFF switch to start and stop,do it no more than 1 time within one hour. ●For inverter that power input grade is 200V, share single/3 phase power input. Just choose any 2 input terminals. For inverter that input grade is 400V, don't connect to single phase power.
U V W	**Connect to 3 phase motor** ●Connect inverter output terminal to 3 phase motor according to correct phase order. If motor rotates in wrong direction, change any 2 phase of U,V,W. ●There is high frequency current in the extra long wire between motor and inverter. This may cause inverter over flow and stop. Besides, long wire increase leaking current, this leads to poor precision of current value.Inverter≤3.7KW choose wire less than 50 meters to motor, less than 100 meters for inverter over 3.7 KW. If the wire is very long a wave filter connected to the output side is necessary.(OFL wave filter) ●During inverter drives the motor, inverter produce current flow voltage onto the motor terminal. For 400V series,current flow voltage makes motor insulant ageing easily with long motor wire. So, if you need inverter drive 400V motor, do as follows. ◇Usd insulation strengthened motor ; ◇Connect wave filter component to inverter output side(OFL wave filter)； ◇Reduce the connecting wire length between inverter and motor, as less than 10-20 meters.

SYMBOL	ILLUSTRATION
P、PR	**Conncet to outside brake resistance（≤18.5KW）（optional）** ≤15KW with brake component which is connected to terminal P,PR. To improve the brake moment of force, an ourside brake resistance is needed. The outside brake resistance terminal P,PR is connected to inverter terminal P,PR . Connecting wire to be tusted or closed parallel wire to be no more than 5 meters.
P、N	Direct current output,connect to outside braking component (22KW,optional) Machinery≥18.5KW install drive circuit without outside braking resistance component. To improve braking power, ouside braking resistance and braking component is necessary(both are optional). ● Conncet braking component terminal P,N to inverter terminal P,N.Connecting wire to be tusted or closed parallel wire, less than 5meters. ●When inverter terminal P,N is idle, keep it unconnected. **ATTENTION：** Connect terminal P,N directly or onto braking resistance will damage inverter, it's forbidden. ●Braking component supplementary terminal 1 and 2 is different from negative and positive. ●For optional power conncetion, please consult the relative illustration.
EG	The inverter box ground terminal should be grounded well. For safty and small noise,inverter ground terminal EG should be well grounded. To avoid electricity shock and fire, metal box or shell should be well ground as stipulated by the state electricity regulation.The connect wire should be short and thick. Inverter should connect to special ground terminal.  correct correct wrong

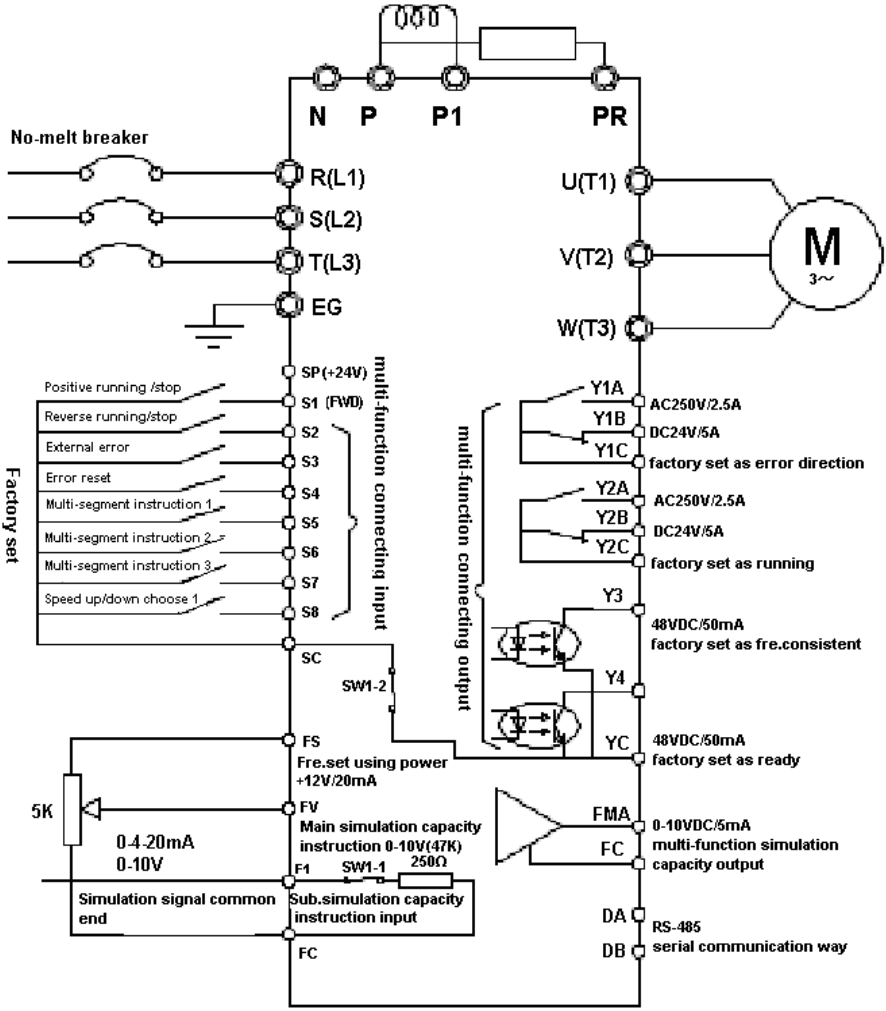
（4）CONTROL CIRCUIT TERMINAL

SORT	symbol	Terminal name	FUNCTION
Simulate value input	FS	Potential power	Potential power（+12VDC）for setting frequency（1～5kΩ）.
	FV	Voltage input setting	●Frequency set by simulated voltage input value ◇0～10V DC/0～100% ◇anti action：+10V～0V DC/0～100% ●Input PID target control signal, input impedance:20kΩ
	FI	Current input	●Frequency set by simulated voltage current open circuit J1 input value ◇4～20mA DC/0～100% ◇0～10V DC/0～100%（open circuit J1） ●Input PID feedback control singal, input impedance:250Ω
	FC	Simulaged public terminal	Public terminal of simulated input signal.
Joint input	S1	Rotation/stop	Terminal S1-CM ON:run in the right way OFF:low down and stop
	S2	Opponent direction stop	Terminal S2～S8 is functional for motor free rotation, outside alarm, alarm resume,multi-pace frequency signal. For more detail, please check terminal function SETTING (S2～S8)（B01～B07）.
	S3	Input option 3	
	S4	Input option 4	
	S5	Input option 5	
	S6	Input option 6	
	S7	Input option 7	
	S8	Input option 8	
	SP	+24V power	Max.output current :500mA
	SC	Public input terminal	Public terminal for signal input
Simulate value output	FMA	Simulate monitor (FC public terminal)	Output monitor signal of simulated voltage 0～+10VDC Choose one of the following choices as the minitoring target： ●output frequency(10V/max frequcncy A10) ●output current flow(10V inverter rated current) ●power output(10V inverter rated current) ●DC voltage10V/400V(200V grade)800V(400V grade)
Joint output	Y1、Y2 A、B、C	Optional signal output relay	Inverter output minitor signal by transitor OC, signals are "RUNNING, FREQUENCY ARRIVAL, OVERLOAD FORCAST, ETC…There is 4 output singals altogether. Please check terminal function setting.
OC output	Y3、Y4	Transitor OC output Y3、Y4	
communic-ation	DA、DB	RS485 communic ation input/output	RS485 communication input/output terminal connecting max.31 inverters
grounding	EG	Control wire grounding protection	Control wire grounding protection

3、 basic wiring diagram

The inverter wiring part divides into main circuit and control circuit.open the cover you can see the main circuit terminal and control circuit terminal,if connect this two you must according to the wiring map below.

The wiring diagram below is the standard：



4、Facilities connected to the main circuit, wire size

Model	breaker **(MCCB)A**	input/output lead section **MM^2**	contactor **A**
SU400D4G23A	12	2.5	10
SU40D75G23A	16	2.5	10
SU401D5G23A	25	4	16
SU402D2G23A	32	6	20
SU40D75G43A	16	2.5	10
SU401D5G43A	16	2.5	10
SU402D2G43A	16	2.5	10
SU403D7G43A	25	4	16
SU405D5G07D5P43A	25/40	4/6	16/25
SU407D5G0011P43A	40/63	6/6	25/32
SU40011G0015P43A	63/63	6/6	32/50
SU40015G18D5P43A	63/100	6/10	50/63
SU418D5G0022P43A	100/100	10/16	63/80
SU40022G0030P43A	100/125	16/25	80/95
SU40030G0037P43A	125/160	25/25	95/120
SU40037G0045P43A	160/200	25/35	120/135
SU40045G0055P43A	200/200	35/35	135/170
SU40055G0075P43A	200/250	35/50	170/230
SU40075G0090P43A	250/315	50/70	230/280
SU40090G0110P43A	315/400	70/95	280/315
SU40110G0132P43A	400/400	95/150	315/380
SU40132G0160P43A	400/630	150/185	380/450
SU40160G0185P43A	630/630	185/185	450/500
SU40185G0220P43A	630/800	185/250	500/630
SU40220G0250P43A	800/800	250/300	630/700
SU40250G0280P43A	800/1000	300/370	700/780
SU40280G0315P43A	1000/1200	370/480	780/900
SU40315G0350P43A	1200/1400	480/510	900/1000

ATTENTION：

A、Use 600V IV plastic insulated wire as main circuit wire.

B、Recommend wire section and environment temperature to be 20℃.

C、Max wire section means max.section limited by the terminal plate.

●Connect MCCB(SWITCH) between power and power input terminal(L1/R,L2/S,LS/T). Please conncet high frequency switch when using leakage current switch.

●Wires connected to power input terminal(L1/R,L2/S,L3/T) don't have phase order.

●Please connect output terminal(U 、V 、W) to motor properly.

●Please use pressure joint with casing pipe on terminal of power wire, motor and control wire.

●Standard input and output wire length is 10 meters. If wire length exceeds 10 meters,please use thicker wire as recommended.

●Use shield or twisted wire to connect to the control circuit terminal. Keep it away from the main circuit, strong electricity circuit(include time order circuit of 200V relay).

●To avoid relay connected to the control circuit terminal unproperly, please use relay of small contact or double contact.

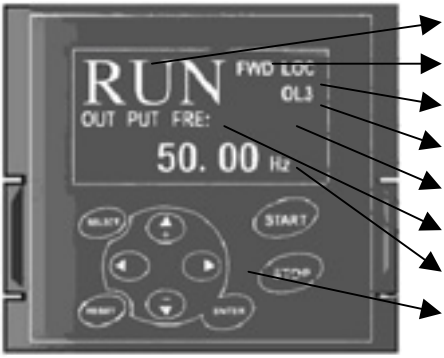
●Connect ground terminal(EG)properly.

F、CONTROL PANEL AND OPERATION

SU4000 series inverter has a 128*64 lattice Chinese and English LCD or 6 figure LED display operation panel(optional) that can display the running status,running direction, alarm, forcast alarm information,panel/remote instruction, monitored data, I/O status,function data,etc.

Panel is separated and isolated from input potential. Panel is allowed to be taken off during operation.But this is not recommended when panel is related with operation, say panel controls
START/STOP and frequency setting.

1、LCD CONTROL PANEL



RUN，STOP=Inverter status
FWD，REV=Running direction
LOC，REMx=Control source
=alarm code
=jog status
=monitored data
=concrete value
=touch button

Figure 6-1 outlook of LCD control

Illustration of figure 6-1：

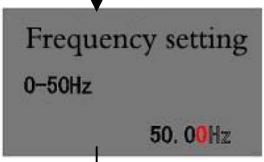
BUTTON	NAME	FUNCTION
SELECT	SELECT	Shift between standby and data manu.
ENTER	CONFIRM	Data monitor and amend and store.
▲ ▼	+OR－	Increase and decrease of data and function manu.
◀ ▶	CHANGE	Manu shift and select data setting.
RESET	RESET	Delete data setting and exit; reset when on alarm status (only for minitoring).
START	START	Running is right direction (for panel control only).
STOP	STOP	Stop running.
STOP + **▲**	JOG	JOG and START.
STOP + **RESET**	PANEL/REMO-TE CONTROL	Select panel control or remote control.

（1）Operation of LCD control panel：

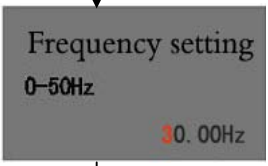
Data on the panel is in the manu and sub-manu

●Setting control panel main frequency (such as main frequency change to be 3000Hz)

press ◄ ▲ ▼ ► =>MANU



●press ◄ ► to select
●press ▲ ▼ set frequency



●press **RESET** finish setting when **ENTER** button is invalid
●press **ENTER** finish setting when **ENTER** is valid
●exit when idle for 3 seconds

●Monitored data shift (such as:shift to output voltage)

press **ENTER** to shift

Code illustration：

CODE	MEANING
1：Fre Out	Frequency output value
2：Cur Out	Current output value
3：Vol Out	Voltage output value
4：Pow Out	Power output value
5：EDC	DC circuit voltage
6：PID	feedback value
7：Fre Set	frequency setted

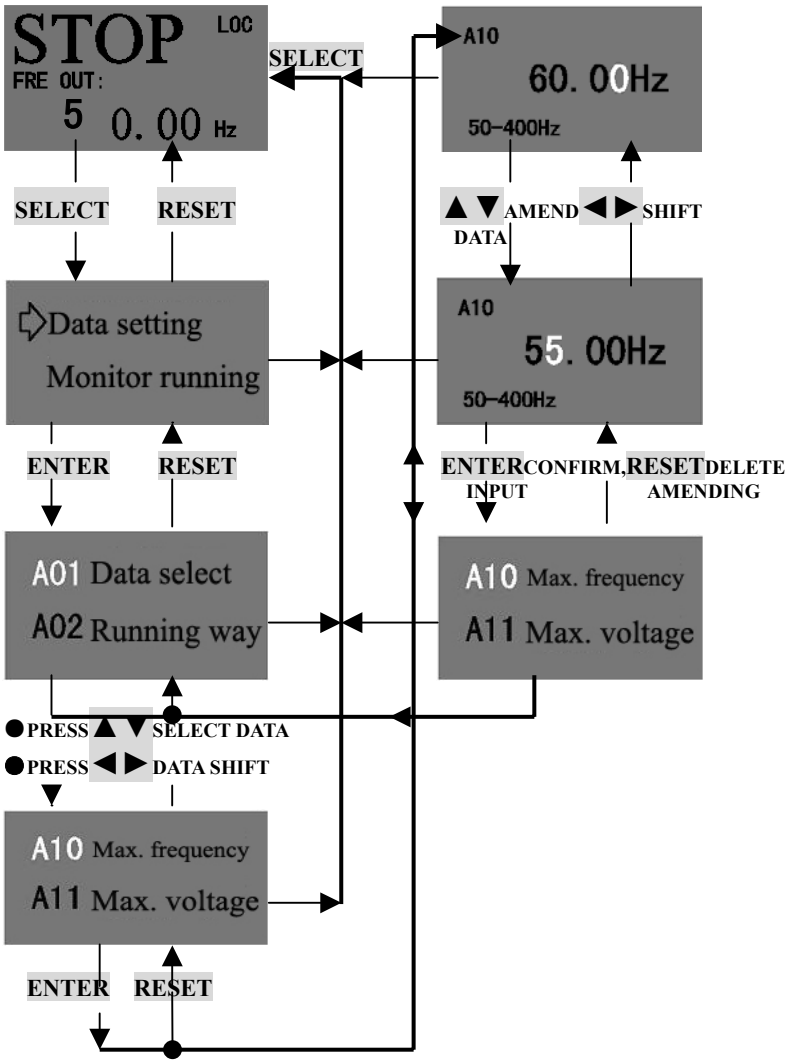
●**Data setting/running/maintenance/problem/data copy**

Press **SELECT**，press ▲▼to choose function，press**ENTER** to enter function manu,press **RESET** to exit，press▲▼to shift，press**RESET** to exit.

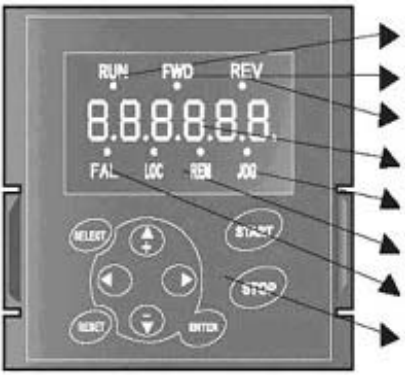
CONTENT	LCD DISPLAY		FUNCTION	REMARK
1. data setting	During installation,set inverter data to be proper value.There is 6 relative group data in data setting manu.			
2. monitor running	**First screen**	Fout = x x x.x x Hz I out = x x . x A V out = x x x V	Frequency output value Current output value Voltage output value	
	Second screen	S 1 = 1 X 4 = 0 S 2 = 0 X 5 = 0 S 3 = 1 X 6 = 0	Status of input terminal S1~S8 and Y1~Y4 output terminal (connect input terminal and CM terminal to be 1 is valid , 0 is invalid.	
	Third screen	S 7 = 0 Y2 = 0 S 8 = 0 Y3 = 0 Y 1 = 0 Y4 = 0		
3. maintanence	First screen	EDC = x x xV TMPF= x x℃ TIME= x x x x x h	Middle DC voltage Inverter inner temp Inverter total running time	
	second screen	KVA =400V/18A MINV = V e r x.x KINV = V e r x.x	Inverter power grade Main board ROM edition Panel ROM edition	
4. alarm	only one screen	-1=Uu -4= -2= -3=	Monitor 4 problems before power off/power off/problem remove.	
5. data copy	only one screen	<DATA COPY> ST-V2.0 READ ▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮	Data copy and checking for batch inverter data setting.	
6. special function	User cannot check and amend these data. It can only be amended by our technician during maintanence or changing control panel.			

●FUNCTION DATA SETTING：

（EXAMPLE：max.frequency chang to55.00Hz）



2、LED control panel illustration



RUN =light on when motor is running.

FWD =light on when motor runs in correct direction.

REV =reverse direction

=6figure LED display.

JOG=jog and start.

LOC/REM=LED display valid control source

FAL=inverter problem

=key

4-1 LED control panel outlook

●key function see figure 6-1

●monitor status：

6 figure displalys flashing the monitored content when inverter is running

6 figure display shows the monitored content steadly when inverter is running.

（1） LED control panel operation：

●Frequency setting on minitoring status

step	operation	LED display	illustration
1	◄▲▼►	60.00	Shift to frequency setting
2	◄ ►	60.00	Shift to the correction position
3	▲ ▼	50.00	Amend input data
4	**RESET**	50.00	When **ENTER** invalid exit and finish setting
	ENTER	50.00	When **ENTER** valid,confirm amendment and finish
	Input no key of 3 Sec	50.00	When **ENTER** invalid exit and finish setting auautomatically

ATTENTION： When control function is valid on the control panel, **START**and**STOP** button is invalid when shift to frequency setting.

●SHIFT OF MONITORING TARGET：

Press ENTER to shift to monitoring target. It displays the monitoring data first,then shift to display data 1 second later.

NO.	LED dispaly	Item illustration
0	F-OUT ∀ 50.00	Actual frequency output value
1	F-SET ∀ 50.00	Actual frequency setting value
2	V-OUT ∀ 380.0	Actual voltage output value
3	A-OUT ∀ 11.0	Actual current output value
4	KVA ∀ 7	Actual power output value
5	EDC ∀ 540	DC current voltage inside inverter
6	T ∀ 37	Inverter radiator temperature
7	S1-8 ∀ 111	S1-S8 outside terminal input, 1valid, dark invalid
8	Y1-Y4 ∀ 11	Y1-Y4 outside terminal output, 1 valid, dark invalid
9	HOU ∀ 103	Inverter total running or in power time(select by Pr-C31)
10	VER ∀ 2.0	Control panel edition

●**POWER DATA SETTING：**

（EXAMPLE：change first frequency to：50.00Hz）

step	operation	LED display	illustration
1	POWER ON	Ver2.0 ∀ 0.00	Inverter self-check after power is on and displays the edition NO.Then shift to monitoring target and twinkles the output frequency.
2	**SELECT**	Pr-A01	Enter into programming status,display Pr-A01.
3	◄▲▼►	Pr-A26	Select data Pr-A27 that needs amending.
4	ENTER	60．00	Amending the content of Pr-A27
5	◄▲▼►	50．00	Select and amended the twinkling digit.
6	**ENTER**	Pr-A27	Confirm data amended and exit, plus manu
	RESET	Pr-A27	Cancel data amending and exit
7	**SELECT**	0．00	Return to disply screen, finish setting

G、TRIAL OPERATION

1、Pre-running check

Checking the following before running：

●Check if wire connection is correct. Confirm inverter output perminal U, V, W is not connected to POWER and the ground terminal E(G) is grounded well.

●Confirm there is no short circuit within every terminal and electricitized naked part.

●Confirm all terminals connection and joints are tight and not loose.

●Before transit power, switch off all the swiches to ensure inverter will not start and to avoid any uncertainty.

●Check the following after power is on:

◇No PROBLEM displayed on the key panel.

◇ Cooling fan inside inverter is not blocked and wind goes smoothly.

Transit power after cover is fixed.

Don’t remove the cover after power is on.

Don’t operate with wet hands to avoid.

2、Running way

There are many running ways showed in “Chapter 6 CONTROL PANEL AND OPERATION” and Chapter5 “FUNCTION DATA ILLUSTRATION”.Choose the best operation way according to actual need and running regulations.The common running ways are listed on figure 7-1.

3、Trial operation

Check everything is OK, set the inverter running data correctly. After setting running data, goes to trial running procedure.

When running on trial, run inverter and motor in low frequency. Improve running frequency when every thing is ok. Inverter is pre-set to REM3（REMOTE CONTROL） in our factory. Set data “A02” or **STOP**+**RESET** combination key to shift to reset control way.

Figure7-1, common running way

running way	frequency setting	running order
key panel operation	SELECT ◄▲▼►	Press button **START** to satart and **STOP** to stop
emote control	Potential or simulated voltage current	Input joint terminal S1-SC、S2-SC

- ●Press **START** to start and **STOP** to low down and stop.
- ●Check the following before running.
- ◇motor running direction is correct.
- ◇motor runs smoothly(no scream and vibration).
- ◇increase and decrease speed smoothly.
- ●Use key ▲▼ to increase frequency and continue trial running. Turn to formal running when everything is ok.

If there is any abnormal phenomena occured, stop inverter immediately. Consult “Chapter 10 trouble shooter” to find the problem. When inverter stops, terminal L1/R1, L2/S, L3/T is still with power if main circuit is not switched off. Any touch onto terminal U, V, W will be shocked. Besides, wave filter capacitor is still full of charging voltage and need certain period of time to discharge, if main circuit power is off. Touch inner inverter circuit only after power is off 10 minutes later and the DC circuit voltage tested by DC circuit voltage meter is below safety voltage.

H、FUNCTION DATA

DATA	LED	LCD	LIMIT	FACTORY VALUE
Data select initial data	**Pr-A01**	**A01 data select**	0～7	0
Control Mode select	**Pr-A02**	**A02 control Mode**	0～1	0
Running way	**Pr-A03**	**A03 running way**	0～8	3
Display mode	**Pr-A04**	**A04 display mode**	0～3999	0
Stop mode	**Pr-A05**	**A05 stop mode**	0～3	0
Motor rotating direction	**Pr-A06**	**A06 power phase**	0～1	0
	Pr-A07	**A07 opsition direction forbidden**	0～1	0
Input voltage setting	**Pr-A08**	**A08 voltage input**	150.0V～250.0V*1	200.0V*1
V/F mode	**Pr-A09**	**A09 V/F select**	0～15	1
	Pr-A10	**A10 rated power**	150.0V～250.0V*1	200.0V*1
	Pr-A11	**A11 max. frequency**	50.00Hz～400.00Hz	60.00Hz
	Pr-A12	**A12 max. voltage**	0.1V～250.0V*1	200.0V*1
	Pr-A13	**A13 standard frequency**	0.20Hz～400.00Hz	60.00Hz
	Pr-A14	**A14 middle Fre.**	0.10Hz～400.00Hz	3.00Hz
	Pr-A15	**A15 millde voltage**	0.1V～255.0V*1	15.0V*1
	Pr-A16	**A16 start Fre.**	0.10Hz～10.00Hz	1.50Hz
	Pr-A17	**A17 start voltage**	0.10V～500.00V*1	10.0V*1
Setting times for speed up and down	**Pr-A18**	**A18 speed up 1**	0.1S～3600.0S	10.0S
	Pr-A19	**A19 speed down 1**	0.1S～3600.0S	10.0S
	Pr-A20	**A20 speed up 2**	0.1S～3600.0S	10.0S
	Pr-A21	**A21 speed down 2**	0.1S～3600.0S	10.0S
	Pr-A22	**A22 speed up 3**	0.1S～3600.0S	10.0S
	Pr-A23	**A23 speed down 3**	0.1S～3600.0S	10.0S
	Pr-A24	**A24 speed up 4**	0.1S～3600.0S	10.0S
	Pr-A25	**A25 speed down 4**	0.1S～3600.0S	10.0S
S curve sellect	**Pr-A26**	**A26 curve mode**	0～3	1
Setting frequency order	**Pr-A27**	**A27 Fre. 1**	0.00Hz～400.00Hz	0.00HZ
	Pr-A28	**A28 Fre. 2**	0.00Hz～400.00Hz	0.00HZ

DATA	LED	LCD	LIMIT	FACTORY VALUE
Setting frequency order	**Pr-A29**	**A29 Fre. 3**	0.00Hz～400.00Hz	0.00HZ
	Pr-A30	**A30 Fre. 4**	0.00Hz～400.00Hz	0.00HZ
	Pr-A31	**A31 Fre. 5**	0.00Hz～400.00Hz	0.00HZ
	Pr-A32	**A32 Fre. 6**	0.00Hz～400.00Hz	0.00HZ
	Pr-A33	**A33 Fre. 7**	0.00Hz～400.00Hz	0.00HZ
	Pr-A34	**A34 JOG Fre.**	0.00Hz～400.00Hz	0.00HZ
Output frequency	**Pr-A35**	**A35 Fre. up limit**	0%～100%	100%
	Pr-A36	**A36 Fre. low limit**	0%～100%	0%
Jumping Frequency setting	**Pr-A37**	**A37 jump Hz1**	0.00Hz～400.00Hz	0.00HZ
	Pr-A38	**A38 jump Hz2**	0.00Hz～400.00Hz	0.00HZ
	Pr-A39	**A39 jump value**	0.00Hz～25.00Hz	1.00Hz
Simple PLC running setting	**Pr-A40**	**A40 running mode**	0～3	0
	Pr-A41	**A41 step 1 mode**	F1, 0S～R4 ,4000S	F1,0S
	Pr-A42	**A42 step 2 mode**	F1, 0S～R4 ,4000S	F1,0S
	Pr-A43	**A43 step 3 mode**	F1, 0S～R4 ,4000S	F1,0S
	Pr-A44	**A44 step 4 mode**	F1, 0S～R4 ,4000S	F1,0S
	Pr-A45	**A45 step 5 mode**	F1, 0S～R4 ,4000S	F1,0S
	Pr-A46	**A46 step 6 mode**	F1, 0S～R4 ,4000S	F1,0S
	Pr-A47	**A47 step 7 mode**	F1, 0S～R4 ,4000S	F1,0S
Select multi-function joint terminal	**Pr-B01**	**B01 S2 function**	0～26	0
	Pr-B02	**B02 S3 function**	2～26	2
	Pr-B03	**B03 S4 function**	2～26	4
	Pr-B04	**B04 S5 function**	2～26	9
	Pr-B05	**B05 S6 function**	2～26	10
	Pr-B06	**B06 S7 function**	2～26	11
	Pr-B07	**B07 S8 function**	2～27	12
Multi-function joint output function	**Pr-B08**	**B08 Y1 function**	0～18	0
	Pr-B09	**B09 Y2 function**	0～18	1

DATA	LED	LCD	LIMIT	FACTORY VALUE
Multi-function joint output function	**Pr-B10**	**B10 Y3 function**	0～18	4
	Pr-B11	**B11 Y4 function**	0～18	5
Time function	**Pr-B12**	**B12 ON delay**	0.0～25.5	0.0S
	Pr-B13	**B13 OFF delay**	0.0～25.5	0.0S
Function selection for frequency order	**Pr-B14**	**B14 main imitation value**	0～1	0
	Pr-B15	**B15 sub imitation value**	0～1	1
	Pr-B16	**B16 Fre. keep**	0～1	0
	Pr-B17	**B17 Fre. lost**	0～1	0
	Pr-B18	**B18 Fre. increase**	0%～200%	100%
	Pr-B19	**B19 off Fre.**	-100%～100%	0
Function sllection for output imitate value	**Pr-B20**	**B20 FMA function**	0～3	0
	Pr-B21	**B21 FMA increase**	0.01～2.00	1.00
Test Fre. unanimity	**Pr-B22**	**B22 Fre. test**	0.00Hz～400.00Hz	0.00Hz
	Pr-B23	**B23 FAR Fre.**	0.00Hz～25.00Hz	2.00Hz
G/P select	**Pr-B24**	**B24 G/P select**	0～1	*
Adjust wave Fre.	**Pr-C01**	**C01 wave Fre.**	1～9	*3
	Pr-C02	**C02 instant stop**	0～2	0
Instant power off and speed search control	**Pr-C03**	**C03 search standard**	0%～200%	110%
	Pr-C04	**C04 block time**	0.5S～5.0S	*3
	Pr-C05	**C05 search V/F**	0～100%	*3
	Pr-C06	**C06 instant stop period**	0.0～2.0S	*3
Trouble and reset	**Pr-C07**	**C07 auto re-test**	0～10	0
	Pr-C08	**C08 re-try joint**	0～1	0
DC break	**Pr-C09**	**C09 break current**	0%～100%	50%
	Pr-C10	**C10 break stop**	0.0S～10.0S	0.5S
	Pr-C11	**C11 break starter**	0.0S～10.0S	0.0S

DATA	LED	LCD	LIMIT	FACTORY VALUE
Moment of force compensation	**Pr-C12**	**C12 compensation for rotating force**	0.0～3.0	1.0
	Pr-C13	**C13 wire resistance**	0.000R～65.530R	*3
	Pr-C14	**C14 motor iron loss**	0W～9999W	*3
Rotating margin correction	**Pr-C15**	**C15 increase rotation margin**	0.0%～9.9%	0.0S
	Pr-C16	**C16 empty load current**	0%～99%	30%
	Pr-C17	**C17 correct delay**	0.0S～25.5S	2.0%
Electronic heat protection	**Pr-C18**	**C18 rated curreny**	*2	*3
Stop over flow and speed lose	**Pr-C19**	**C19 overload protection**	0～1	1
	Pr-C20	**C20 loose speed**	0～1	1
	Pr-C21	**C21 speed up standard**	30%～200%	*3
Test over-rotation moment of force	**Pr-C22**	**C22 running standard**	30%～200%	*3
	Pr-C23	**C23 rotating force test**	0～4	0
Test missing phase input and output	**Pr-C24**	**C24 rotation standard**	30%～200%	160%
	Pr-C25	**C25 over retating force T**	0.1S～10.0S	0.1%
	Pr-C26	**C26 SPI standard**	1%～100%	7%
	Pr-C27	**C27 SPI delay**	2S～255S	8%
	Pr-C28	**C28 SPO standard**	0%～100%	0%
	Pr-C29	**C29 SPO delay**	0.0S～2.0S	0.2S
Setting converter capacity accelated time	**Pr-C30**	**C30 function select**	*4	*3
	Pr-C31	**C31 time select**	0.0～10.0S	0.0S
	Pr-C32	**C32 timer L**	0H～9999H	0H
	Pr-C33	**C33 timer H**	0～27*10000H	0H
PID control	**Pr-D01**	**D01 PID select**	0～3	0
	Pr-D02	**D02 feedback increase**	0.00～10.00	1.00
	Pr-D03	**D03 increase propotion**	0.0～10.0	1.0
	Pr-D04	**D04 integral time**	0.0S～10.0S	10.0S
	Pr-D05	**D05 differential time**	0.00S～1.00S	0.00S

DATA	LED	LCD	LIMIT	FACTORY VALUE
PID control	**Pr-D06**	**D06 PID deviation**	-109%～109%	0%
	Pr-D07	**D07 intergral limit**	0%～109%	100%
	Pr-D08	**D08 wave filter time**	0.0S～2.5S	0.0S
	Pr-D09	**D09 feedback test**	0～1	0
	Pr-D10	**D10 lose standard**	0%～100%	0%
	Pr-D11	**D11 lose time**	0.0S～25.5S	1.0S
Energy saving control	**Pr-E01**	**E01 select energy saving**	0～1	0
	Pr-E02	**E02 increase energy saving**	0.00～655.00	*3
	Pr-E03	**E03 60Hz voltage**	0%～120%	50%
	Pr-E04	**E04 6Hz voltage**	0%～25%	12%
	Pr-E05	**E05 calculate time**	1～200	1
	Pr-E06	**E06 voltage limit**	0%～100%	0%
	Pr-E07	**E07 100%anti-jump**	0.1%～10.0%	0.5%
	Pr-E08	**E08 5%anti-jump**	0.1%～10.0%	0.2%
RS485 communication control	**Pr-F01**	**F01 local address**	0～31	0
	Pr-F02	**F02 baud**	0～2	2
	Pr-F03	**F03 test odd and even number**	0～2	1
	Pr-F04	**F04 overtime transimission**	0～1	1
	Pr-F05	**F05 CE stop**	0～3	1
Heat radiator stop mode	**Pr-F06**	**F06 OH stop**	0～3	3
Breaking resitance overheat protection	**Pr-F07**	**F07 DBR overheat**	0～1	0
Controller function	**Pr-F08**	**F08 L/R function**	0～1	1
	Pr-F09	**F09 L/R select**	0～1	0
	Pr-F10	**F10 stop key**	0～1	1
	Pr-F11	**F11 enter key**	0～1	1

DATA	LED	LCD	LIMIT	FACTORY VALUE
Auxiliary functional	-------	**F12 Variable Selection**	0～2	0
	Pr-F12 （Frequency Installed select）	-------	0～1	1
	-------	**F13 LCD brigntness**	0～1	1
	Pr-F13 （Data Manifold Functional）	-------	0～2	0
	Pr-F14	**F14 Surveillance Selection**	0～*	0
Error record	**Pr-G01**	-------	*4	NC
	Pr-G02	-------	*4	NC
	Pr-G03	-------	*4	NC
	Pr-G04	-------	*4	NC

ILLUSTRATION：

***1：** On condition of 400V, 2 times of voltage up limit and factory value.

***2：** Motor rated current output is 10%-200% of inverter rated current.

***3：** Factory value changes according to inverter capacity.

***4：** Data for reading only.

I、FUNCTION DETAIL

A01	data select	setting limit： 0~7	factory value：0

0：changeable data
1：fixed data(user's data is ok, it can be protected without change)
2-6: reserve
7：initialization setting(change to factory value)
If operater adjust the data with mistake, just change data to & press ENTER key to initialise all the data, then reset.

A02	output choose	setting limit：0~1	factory value：1

0: V/F control,when a inverter drags other inverters.
1: general no melt current control can improve power.

A03	operating way	setting limit：0~8	factory value：3

There are two ways(LOCAL and REMOTE) to operate inverter(see figure9-1).They can be selected by combined key "**RESET**+**STOP**" only after inverter stops running. The elected operating way will be display on the control panel LCD. Inverter is preset to be REMOTE in factory (Through control terminal FV and FI frequency). Multi-function joint input through control terminal S3-S10 is suitable both with LOCAL and REMOTE control.

LOC：frequency and running order is set by operation panel.

REM：select the main frequency and running order according to the following sheet.

Figure 9-1，sellect REMOTE control

setting	Select running order	**Select frequency order**
0	From control panel	From control panel
1	From control circuit terminal	From control panel
2	From control panel	From terminal FV&FI
3	From control circuit terminal	From terminal FV&FI
4	From control panel	From serial comminication
5	From control circuit terminal	From serial comminication
6	From serial communication	From serial comminication
7	From serial communication	From control panel
8	From serial communication	From terminal FV&FI

A04	display mode	setting limit：0~3999	factory value：0

0:0.01Hz unit

1：0.1% unit

2~39：120×Fre.order（Hz）/A03（set motor grade）=r/min

40 ~ 3999：the forth figure is dot position, the first to third figure to se 100% Fre.

A05	stop mode	setting limit：0~3	factory value：0

Select suitable way to stop：

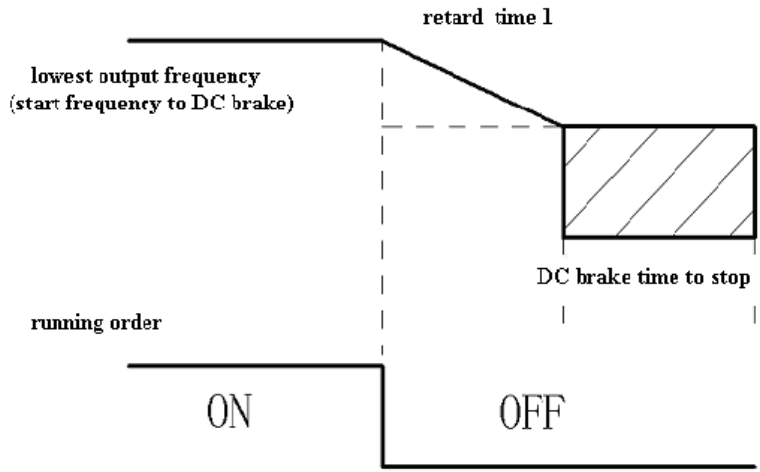
0：low down and stop in first time to retard(factory value)

1：slide to stop

2：slide to stop in first time to retard

3：slide to stop in second time to retard

SETTING：low down and stop in first time to retard(factory value)

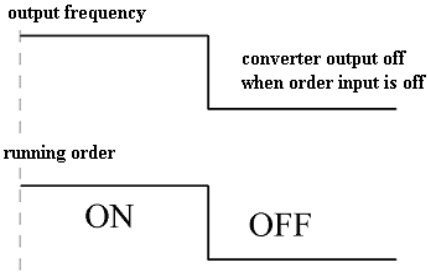


In running order OFF in right and opposite direction, motor retards in retard time 1(A19), and brakes to stop by direct current. If short brake time and big inertia capacity,there will be over voltage(OU)error during retarding. In such circumstances, just extend retard time or install an oppotional brake resistance (Can be installed in SU4000).

Braking moment of force：without brake resistance:20% motor rated moment of force.

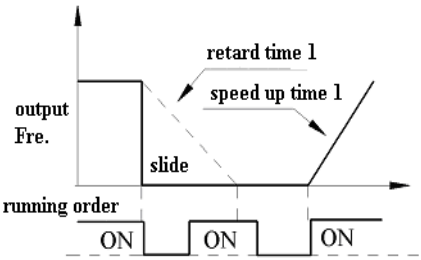
with brake resistance：150% motor rated moment of force.

SETTING：slide to stop



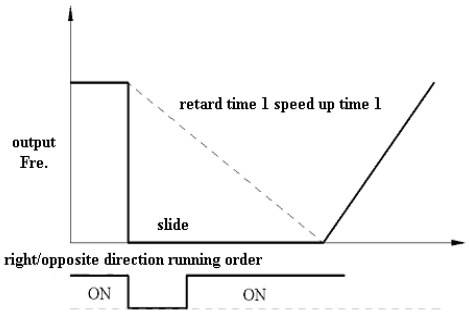
Motor begins to slide when cancel right (opposition) direction running order

SETTING2: slide to stop with first retard time
Select increase/decrease speed 1(example)



Inverter stops when receiving STOP order and retard to stop. Inverter receiving running order and runs after certain time of retard to stop but less than C04 (Min.stop time). Inverter stop running during C04 time.

SETTING3: slide to stop with second retard time
Select increase/decrease speed 2(example)



Deliver running order during retard to stop, inverter will not reaction.

Inverter will start only after retarding time is over. But if retarding times is setting below Min.BB time (C04),running order during BB time is invalid.

A06 power phase position	setting limit：0~1	factory value：0

0 ： motor running direction is anti-clockwise with right running order.

1 ： motor running direction is clockwise with right running order.

A07 opposition forbidden	setting limit：0~1	factory value：0

0：running in opposite direction is available.

1：running in opposite direction is not available it refuse opposite running direction order of control circuit terminal or control panel. This order is suitable for circumstance that opposition running order will cause error.

A08 input voltage	setting limit：150.0V~255.0V	factory value：200.0V

Setting inverter input voltage. Inverter shift voltage protection according to this value.

A09 V/F selection	setting limit：0~15	factory value：15

0~14：select fixed V/F mode.

15 ： select free V/F mode.

●setting：0~14 fixed V/F mode.

The following page shows the fixed V/F mode.

（the listed voltge is 200V grade, for 400V grade, the voltage is 2 times that of 200V）

◇the following must suitable to select the **V/F** mode:

A、motor voltage and frequency property

B、motor utmost running speed

◇Only select high start moment of force on the following circumstance：

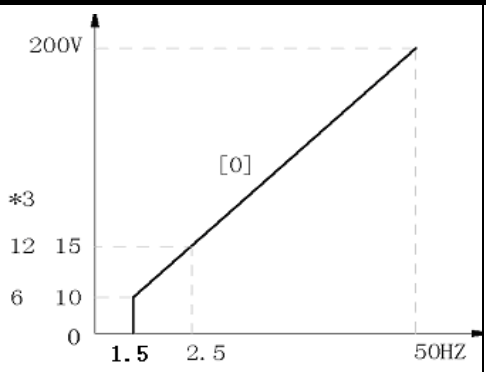
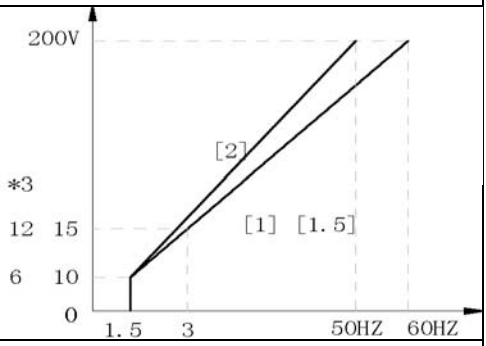
(usually not necessary)

A、long connecting wire(150m or longer)

B、voltage reduce too much during STATT

C、AC recator is in inverter input and output

D、applies motor that power is smaller than inverter rated output power.

<table>
<tr><th>USAGE</th><th colspan="2">TECH SPEC</th><th>SET</th><th>V/F MODE*1</th></tr>
<tr><td rowspan="3">General usage</td><td colspan="2">50HZ</td><td>0</td><td rowspan="1"> 
</td></tr>
<tr><td rowspan="2">60 HZ</td><td>60HZ saturation</td><td>1</td><td rowspan="2"> 
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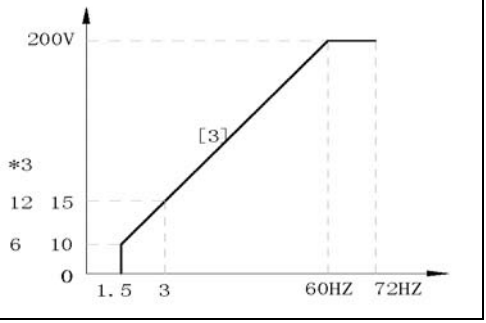
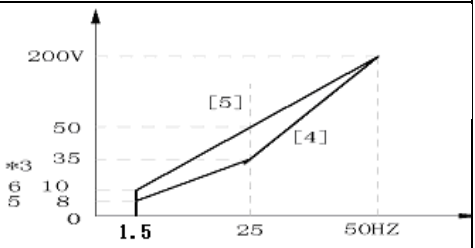
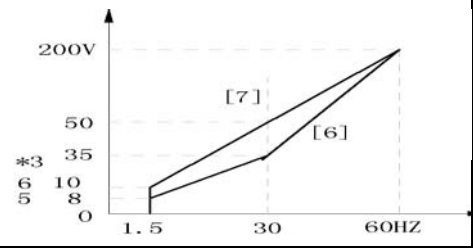
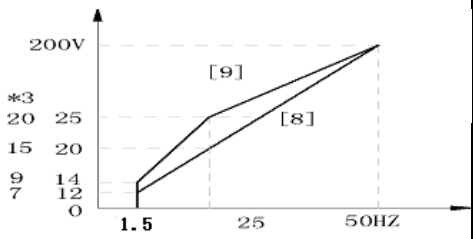
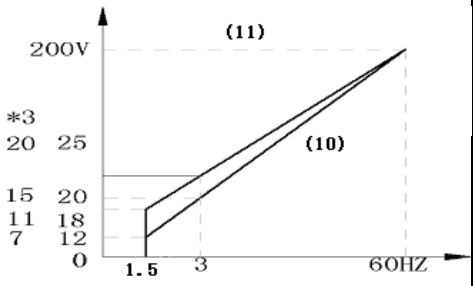
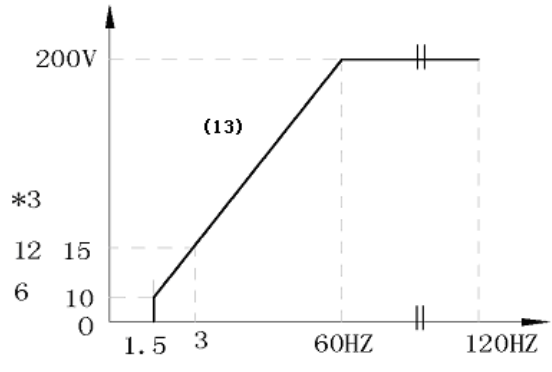
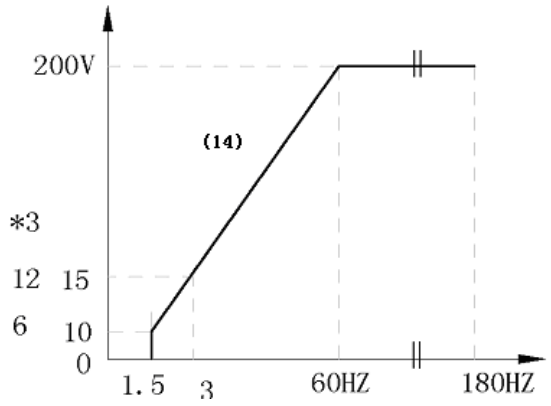
<tr><td>50HZ saturation</td><td>2</td></tr>
<tr><td colspan="2">72HZ</td><td>3</td><td> 
</td></tr>
</table>

<table>
<tr><th>USAGE</th><th colspan="2">TECH SPEC</th><th>SET</th><th>V/F MODE*1</th></tr>
<tr><td rowspan="4">moment of force reduce step by step</td><td rowspan="2">50 HZ</td><td rowspan="2">reduce in 3 times</td><td>4</td><td rowspan="2"> 
</td></tr>
<tr><td>5</td></tr>
<tr><td rowspan="2">60 HZ</td><td>reduce in 2 times</td><td>6</td><td rowspan="2"> 
</td></tr>
<tr><td>reduce in 3 times</td><td>7</td></tr>
<tr><td rowspan="4">high speed start moment of force*2</td><td rowspan="2">50HZ</td><td>start moment of force small</td><td>8</td><td rowspan="2"> 
</td></tr>
<tr><td>start moment of force big</td><td>9</td></tr>
<tr><td rowspan="2">60HZ</td><td>start moment of force small</td><td>10</td><td rowspan="2"> 
</td></tr>
<tr><td>start moment of force big</td><td>11</td></tr>
</table>

USAGE	TECH SPEC	SET	V/F MODE*1
fixed moment of force output	90 HZ	12	
	120 HZ	13	
	180 HZ	14	

A10 rated voltage	setting limits：150.0V~255.0	factory value：200.0V

Set motor rated voltage. Calculate fixed V/F mode voltage（A11,A14,A16）

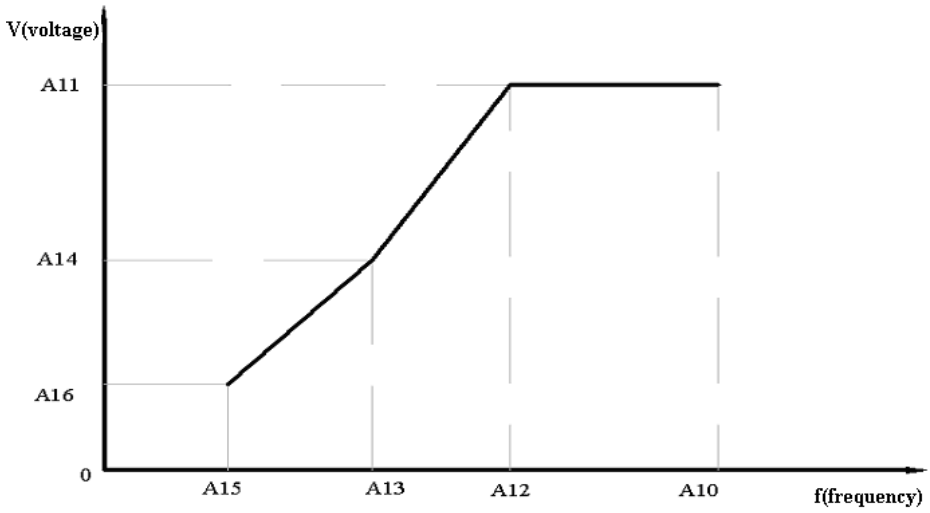
A11	upmost Fre.	setting limits：50.00Hz-400.00Hz	factory value：60.00Hz
A12	Max.voltage	setting limits：0.1V-255.0V*	factory value：200.0V*
A13	standard Fre.	setting limits：0.20Hz-400.00Hz	factory value：60.00Hz
A14	middle Fre.	setting limits：0.10Hz-399.99Hz	factory value：3.00Hz
A15	middle voltage	setting limits：0.1V-255.0V*	factory value ：15.0V*
A16	lowest Fre.	setting limits：0.10Hz-10.00Hz	factory value ：1.50Hz
A17	lowest voltage	setting limits：0.1V-50.0V*	factory value ：10.0V*

※It is 2 times for 400V grade

Set special mode when motor(high speed motor) or machinery need special rotaion moment of force adjustment.

The follow conditions should be meet when setting data A10～A17:

A16≤A14≤A13≤A11



Motor rotating moment of force increase with voltage increase in V/F mode, but too much increase will cause such problems:

1、Overexcitation cause inverter errors.

2、Motor overheat and vibrate too much.

ATTENTION: When increase voltage, check motor current and increase step by step.

A18	1acc elerate	setting limits: 0.0-3600s	factory value: 10.0s
A19	1reduce speed	setting limits: 0.0-3600s	factory value: 10.0s
A20	2acc elerate	setting limits: 0.0-3600s	factory value: 10.0s
A21	2reduce speed	setting limits: 0.0-3600s	factory value: 10.0s
A22	3acc elerate	setting limits: 0.0-3600s	factory value: 10.0s
A23	3reduce speed	setting limits: 0.0-3600s	factory value: 10.0s
A24	4acc elerate	setting limits: 0.0-3600s	factory value: 10.0s
A25	4reduce speed	setting limits: 0.0-3600s	factory value: 10.0s

Accelerate time: Times needed to set Fre.output from0%～100%

Reduce time speed:Times needed to set Fre.output from100%～0%

A26	select curve	setting limits:0～3	factory value: 0

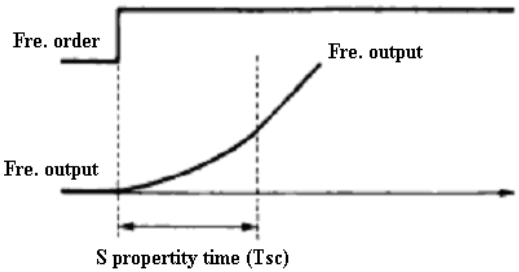
To avoid shock taken place on mechanical START/STOP, use S curve to accelerate and reduce speed.

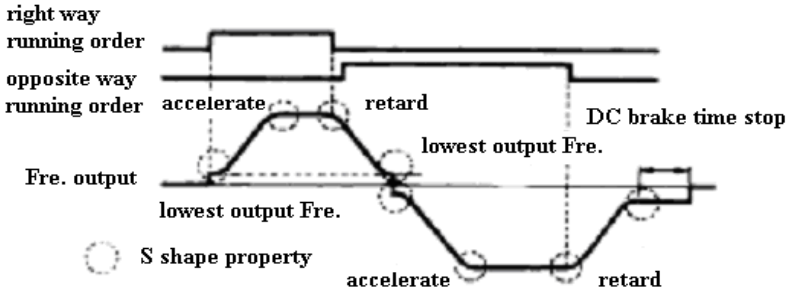
0：no S curve

1：0.2 Sec. (factory value)

2：0.5 Sec.

3：1.0 Sec.





The above time tifuge shows shift of right/opposite running direction when retard to stop.

A27 main Fre.	setting limits：0.00 Hz ~400.00Hz	factory value：0.00Hz
A28 pace 2 Fre.	setting limits：0.00 Hz ~400.00Hz	factory value：0.00Hz
A29 pace 3 Fre.	setting limits：0.00 Hz ~400.00Hz	factory value：0.00Hz
A30 pace 4 Fre.	setting limits：0.00 Hz ~400.00Hz	factory value：0.00Hz
A31 pace 5 Fre.	setting limits：0.00 Hz ~400.00Hz	factory value：0.00Hz
A32 pace 6 Fre.	setting limits：0.00 Hz ~400.00Hz	factory value：0.00Hz
A33 pace 7 Fre.	setting limits：0.00 Hz ~400.00Hz	factory value：0.00Hz

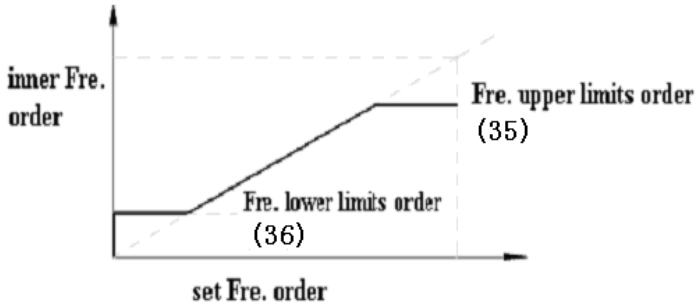
Select multi-pace frequency 1 ~7 by ON/OFF combination of terminal function SS1、SS2 or SS4 inner control multi-pace speed.

A34 JOG/START Fre.	**setting limits：0.00 Hz ~400.00Hz**	**factory value：6.00Hz**

JOG/START Fre. order is valid when multi-function joint terminal input selected to be jog/start order or key jog start order.

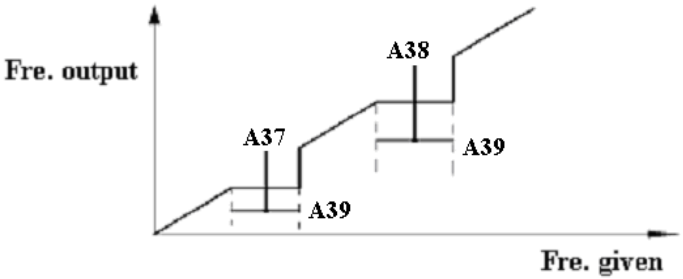
A35 up limit Fre.	setting limits：0%~100%	factory value：100%
A36 up limit Fre.	setting limits：0%~100%	factory value：0%

Uplimit Fre.：Set the up limit Fre. with unit of 1% max. Fre.
Lower limit Fre.：Set the lower limit Fre. with unit of 1% max. Fre.
When Fre. order is 0, inverter continue running under the lower limit. But, if the lower limit Fre. is smaller than min. Fre. output(A16), inverter doesn't work.



A37	jump **Hz1**	setting limits：0.00Hz~400.00Hz	factory value：0.00Hz
A38	jump **Hz2**	setting limits：0.00Hz~400.00Hz	factory value：0.00Hz
A39	jump value	setting limits：0.00Hz~25.00Hz	factory value：1.00Hz

This function forbid or jump the critical frequency for motor to avoid resonance. This function can also control the dead area. Set this value to be 0.00HZ, this function is not working. Set jump Fre. 1 or 2：A37≤A38-A39 if this requirement can not be meet, inverter shows constant setting error "PAF".



A40	running mode	setting limits：0~3		factory value：0
A41	pace 1 mode	setting limits：F1~R4	0~4000S	factory value：F1 0S
A42	pace 2 mode	setting limits：F1~R4	0~4000S	factory value：F1 0S
A43	pace 3 mode	setting limits：F1~R4	0~4000S	factory value：F1 0S
A44	pace 4 mode	setting limits：F1~R4	0~4000S	factory value：F1 0S
A45	pace 5 mode	setting limits：F1~R4	0~4000S	factory value：F1 0S
A46	pace 6 mode	setting limits：F1~R4	0~4000S	factory value：F1 0S
A47	pace 7 mode	setting limits：F1~R4	0~4000S	factory value：F1 0S

mode running （inner simple PLC logic control）：

0：run according to common control way

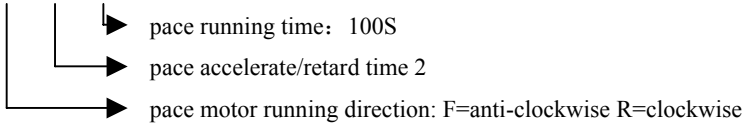
1：inner control multi-speed, this mode stops after running for one week
Inverter runs with the inner data step by step when run order is given. It stop running automatically one week later. Inverter restart when running order is given again.

2：Inner control multi-speed: when repeated running order is given, inverter repeat running step by step according to the inner data. Orders are not accepted except order of STOP, EXTERNAL ERROR, INSTANT STOP when inverter is running.

3：Inner control multi-speed: after running order is given, inverter runs the inner data step by step. It runs with the last speed after one week.

Program pace:

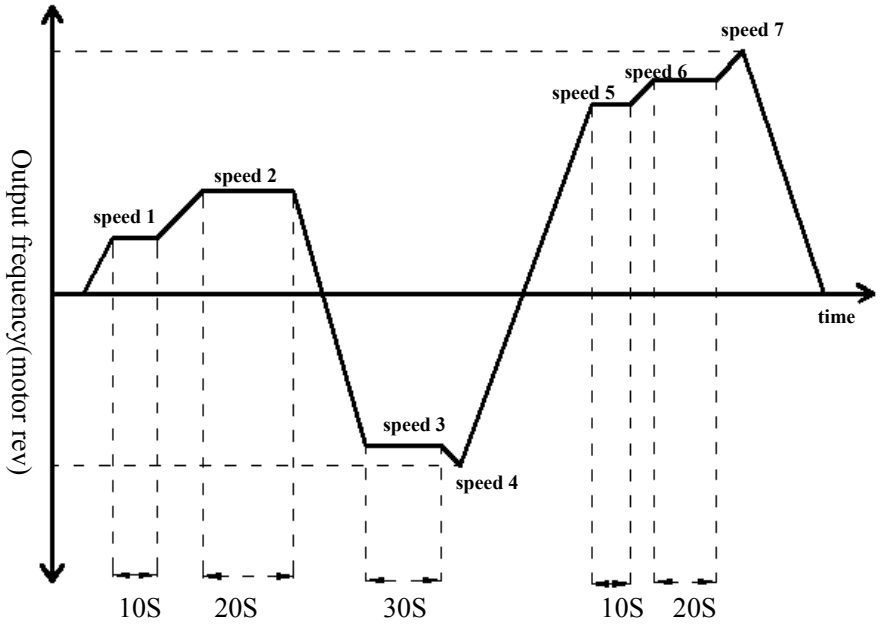
example： F 2 100



ATTENTION：Program pace mode function is to set running direction, accelerate/retard time and running time. Set the idle program pace to be “0”, they will be jumped and change to the next pace.

Set inner control multi-speed running：

FUNCTION	SET VALUE	RUNNING(SET)VALUE
A40 mode running	1	————
A41 pace 1 mode	F1 10.0S	A27 main Fre.
A42 pace 2 mode	F2 20.0S	A28 pace 2 Fre.
A43 pace 3 mode	R3 30.0S	A29 pace 3 Fre.
A44 pace 4 mode	R4 0.0S	A30 pace 4 Fre.
A45 pace 5 mode	F2 10.0S	A31 pace 5 Fre.
A46 pace 6 mode	F3 20.0S	A32 pace 6 Fre.
A47 pace 7 mode	F1 0.0S	A33 pace 7 Fre.



ATTENTION：During above running example, if press STOP key, timer also stops. If restart again, it return to the original speed and continue. If need to stop during running, press RESET key.

B01	**S2 function**	setting limits：0~26	factory value：0
B02	**S3 function**	setting limits：2~26	factory value：2
B03	**S4 function**	setting limits：2~26	factory value：4
B04	**S5 function**	setting limits：2~26	factory value：9
B05	**S6 function**	setting limits：2~26	factory value：10
B06	**S7 function**	setting limits：2~26	factory value：11
B07	**S8 function**	setting limits：2~26	factory value：12

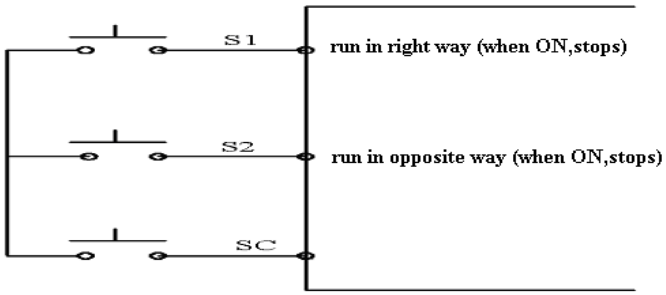
Multi-function joint S2-S8 input：

SET	NAME	ILLUSTRATION
0	Opposite running order(2 wire)	Set only on data B01
1	Right/opposite running order(3 wire)	Set only on data B01
2	External error(OFF joint input)	Inverter stop by error when external error signal input
3	External error(ON joint input)	Stop output, it shows “EF*”on digital display
4	Error reset	Error resume not allowed when input running order
5	Local/remote selection	————
6	Transmit/control circuit terminal selection	————
7	Abnormal stop	Retard to stop by retard time 2 when inputing
8	Main Fre.order input selection	Select main Fre.order to input(“OFF” for voltage input, “ON” for current input)
9	Multi-speed order 1/SS1	————
10	Multi-speed order 2/SS2	
11	Multi-speed order 4/SS4	

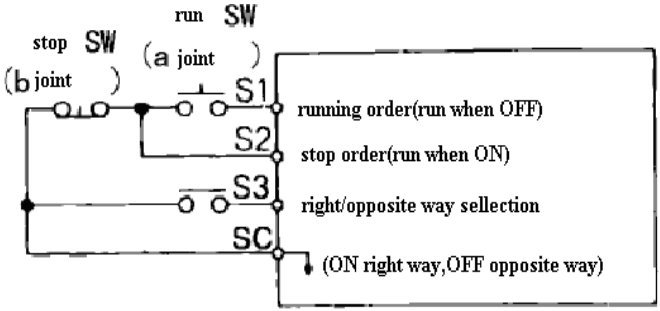
SET	NAME	ILLUSTRATION
12	Jog running	————
13	Accelerate/retard time selection 1/RT1	————
14	Accelerate/retard time selection 2/RT2	————
15	External BB	Slide signal. When input slide signal, motor begin to slide and digital operator shows(BB)
16	External BB	
17	Searching order from max.Fre.	Speed searching order signal
18	Searching order from max.Fre.	
19	Data setting permitted/frobidden	Select permitted/forbidden set by digital operator or parallel communication(“ON”forbidden, “OFF”permitted)
20	PID resume	————
21	PID control forbidden	
22	Timer function	————
23	OH3 (converter overheat alarm)	Input this signal,digital operator displays “OH3”(flashing),inverter continue running
24	Record given simulate value sample and keep	“ON”:simulate Fre.sample “OFF”:keep
25	KEB order (input on “ON” joint)	(running retard to instant stop)when inverter applies in special need as fibre circles,adjust running order to OFF. It can be used as instant stop and emergency situation,such as power OFF. Frequency retard when power is off,inverter continues running with this inertia.
26	KEB order (input on “OFF” joint)	
27	UP/DOWN order	Only data B07 can be set,inverter will increase or decrease frequencyby 1 unit. The amended frequency is not remembered.

●**Set 0，1：**

example:two wire connecting way(set: 0)



example: three wire connecting way(set:1)



●**Set 5，6：**

◇LOCAL/REMOTE selection (set 5)

To select operation by control panel or control circuit terminal.

LOCAL/REMOTE is available when inverter stops.

OFF: run according to operation way(A03)

ON: run according to Fre.order and running order of digital operator.

Example：set A03 to be 3.

OFF: run according to given Fre.from control circuit terminal FV,FI and running order from control circuit terminal S1,S2.

ON: run according to Fre.order and running order from digital operator.

◇Transmit/control circuit terminal selection(SET:6)

select running order from transmit or control circuit terminal. This selection function is valid only when inverter stops.

OFF：run according to running way selection(A03)

ON: run according to the transmitted Fre.order and running order

●Set 9，10，11：

Combined joint input signal			Fre selection
11（SS4）	10（SS2）	9（SS1）	
OFF	OFF	OFF	A27 main Fre.
OFF	OFF	ON	A28 pace 2 Fre.
OFF	ON	OFF	A29 pace 3 Fre.
OFF	ON	ON	A30 pace 4 Fre.
ON	OFF	OFF	A31 pace 5 Fre.
ON	OFF	ON	A32 pace 6 Fre.
ON	ON	OFF	A33 pace 7 Fre.
ON	ON	ON	A34 JOG/START Fre.

Frequency set by external joint input terminal and multi-Frequency pre-set by A27～A29. Select 3 input terminal and their function data set to be 9～11,then multi-frequency can be selected by ON/OFF combination. It can offer 8 target value easily through external terminal in OFF multi-garge value control.

Remark: Select multi-pace frequency 1～7 through ON/OFF combination of terminal function SS1,SS2 and SS4(see B01～B07 forterminal function). Input OFF by terminal function SS1,SS2,SS4 is undefined terminal.

●Set 13，14：select time of accelerating and reducing speed

Select pre-set time for accelerating and reducing speed from outside terminal inputed signal. Appointe 2 input terminals to be function data 13,14,and use to accelerate and reduce speed by ON/OFF key.

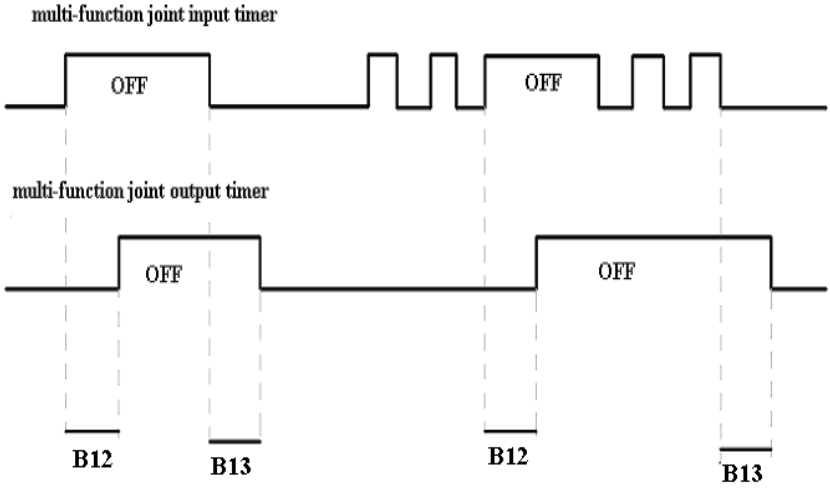
Combined signal input		Selected time of accelerating and reducing speed
14（RT2）	**13（RT1）**	
OFF	OFF	A18 1 accelerate，A19 1 reduce speed
OFF	ON	A20 2 accelerate，A21 2 reduce speed
ON	OFF	A22 3 accelerare，A23 3 reduce speed
ON	ON	A24 4 accelerate，A25 4 reduce speed

REMARKS：Combination ON/OFF switch of terminal function RT1 and RT2 can select 1-4 acclerate and reduce speed. The undefined terminal of function terminal RT1 and RT2 act as OFF.

●Set 22：timer function

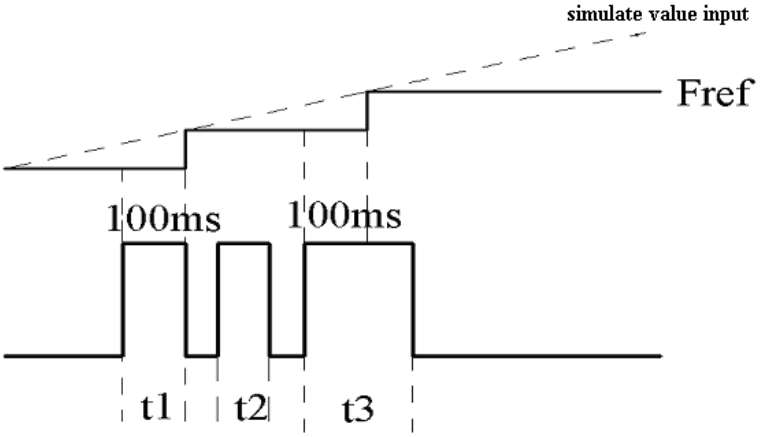
The timer input is on when timer ON is longer than delay timer(B12)ON.

The timer output is OFF when timer OFF is longer than delay timer(B13)OFF.



●Setting 24：given simulate value sampling and keep

Simulate Fre. order is sampleing when input terminal is “ON” is 100ms or longer. When input terminal is “OFF”,the simulate Fre.value I kept.



REMARK：Keep the given value when t1,t2 is 100ms or longer.

Don’t keep the given value when t2 is smaller than 100ms.

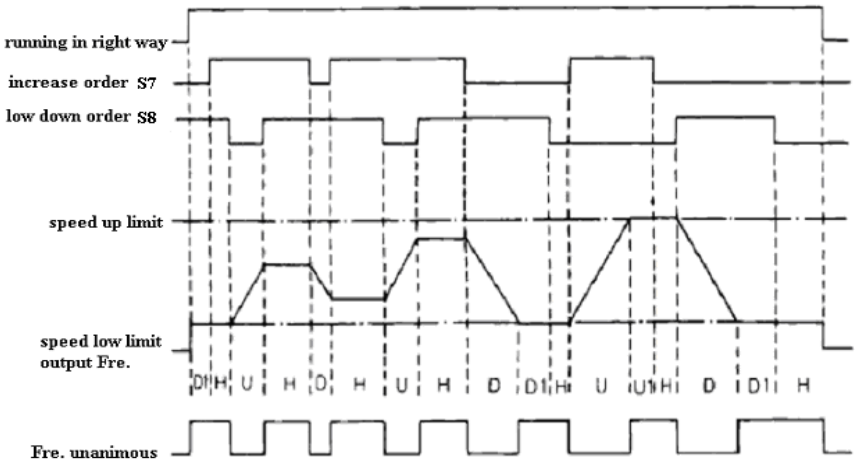
●Set 27：UP/DOWN order（set：B07=27）

Input right/opposite running order, inverter acclerate/retard when input UP/DOWN order to control circuit terminal S7 and S8 without changing Fre. order. This makes inverter runs at anticipated speed.

When UP/DOWN order is appointed by B07, all the function set by data B06 is invalid,and terminal S7 changes to input terminal of UP, S8 changes to be DOWN.

Control circuit terminal S7（UP order）	ON	OFF	OFF	ON
Control circuit terminal S8(DOWN order)	OFF	ON	OFF	ON
Running status	acclerate	retard	keep	keep

The following figure shows the times sheet when input UP/DOWN order


running in right way
increase order S7
low down order S8
speed up limit
speed low limit
output Fre.
Fre. unanimous
D1 H U H D H U H D D1 H U U1 H D D1 H

U=UP（accelerate status）

D=DOWN（decelerate status）

H=HOLD（keep）

U1=UP status（keep stable on up limit value）

D1=DOWN status（keep stable on up limit value）

ATTENTION：

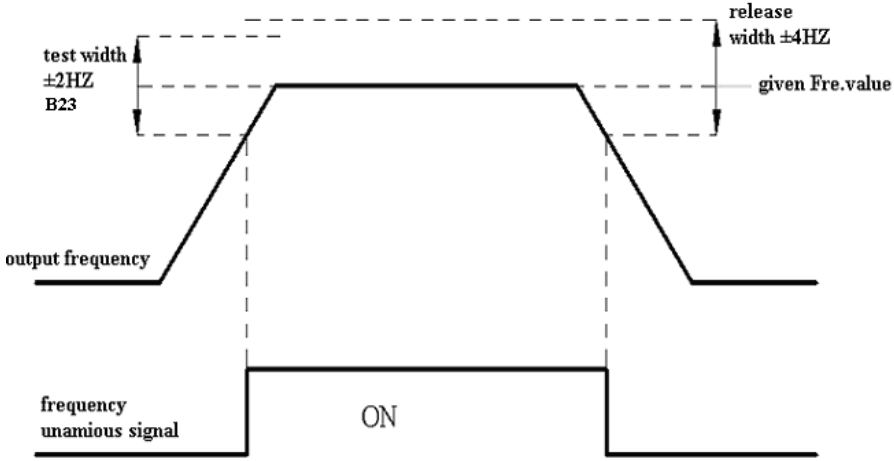
- Set Fre.up limit value when selecting UP/DOWN order, leave alone Fre.order value.
- The low limit can be from control terminal FV,FI simulate order, the bigger one of inverter order low limit.
- When input right(opposite)running order,inverter start from low speed limit though there is no UP/DOWN order.
- If input jog and start order during running with UP/DOWN order, the jog and start order has priority.

B08 Y1 function	**setting limits**：0~18	factory value：0
B09 Y2 function	**setting limits**：0~18	factory value：1
B10 Y3 function	**setting limits**：0~18	factory value：2
B11 Y4 function	**setting limits**：0~18	factory value：3

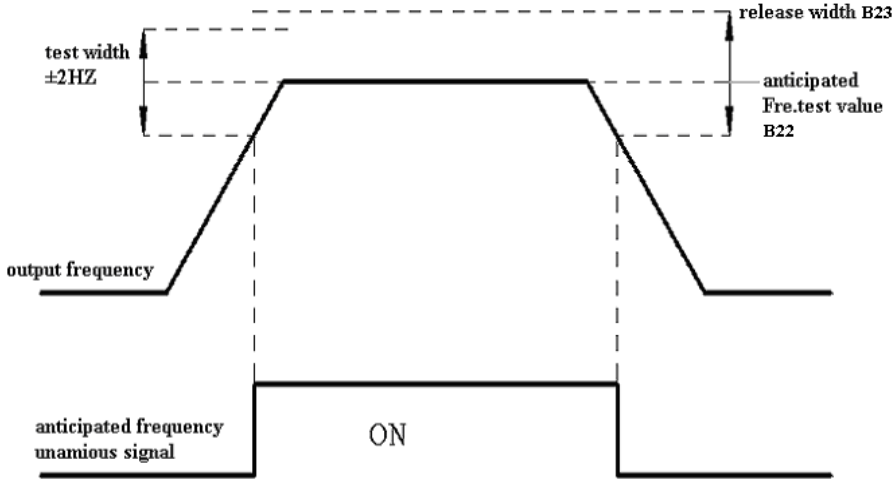
Illustration of multi-function output：

SET	NAME	ILLUSTRATION
0	error	switch off on errors
1	running	switch off when input right/opposite order or innverter output voltage
2	Fre.unanimous	————
3	any Fre.unanimous	————
4	Fre.test	output Fre.≤Fre.test standard
5	Fre.test	output Fre.≥Fre.test standard
6	test over moment of force(on)	————
7	test over moment of force(off)	————
8	BB（polar lock）	switch off when inverter output is off
9	running mode	switch off when select panel operation or Fre.order
10	inverter run ready	switch off when inverter has no error and can run
11	timer function	————
12	automatic restart	switch off during error and restart
13	OL（overload）alarm	————
14	given Fre.lost	————
15	transmission data output 1	data output position 1 from RS485 communication
16	transmission data output 2	data output position 2 from RS485 communication
17	PID feed back lost	————
18	OH1 jalarm	————

●**Setting: 2，setting example of "frequency unanimous" signal**



●**Setting: 3，setting example of "any frequency unamious signal"**



B12 ON delay	**setting limits**：0S～25.5S	factory value：0
B13 OFF delay	**setting limits**：0S～25.5S	factory value：0

Input/output filter wave. (see page 55)

B14 main simulate value	**setting limits**：0～1	factory value：0

Main frequency order input way (B14): to input main frequency from control circuit terminal, it can select voltage(0-10V) or current(4-20MA)through setting constant B14.

0： FV，0~10V input

1： FI，4~20mA input

B15 supplementary simulate value	**setting limits**：0～1	factory value：1

Setting constant B15 to chang input current of control circuit terminal FI

0： 0~10V input

1： 4~20mA input

ATTENTION：set PC board SW1-1 to OFF when setting constant B15 to bo "0".

B16 Fre.keep	**setting limits**：0～1	factory value：1

This function is valid when select UP/DOWN order for muti-function joint input. Set constant B16 to be "0"when UP/DOWN order is used to keep frequency(when power is off).

0：keep the given value in frequency(constant A27)

1：don't keep

ATENTION：When B16 is 0, frequency is kept although inverter power is off.

B17 frequency lost	**setting limits**：0～1	factory value：1

Select running way on circumstance that control circuit terminal frequency reduces quickly

0：don't treat

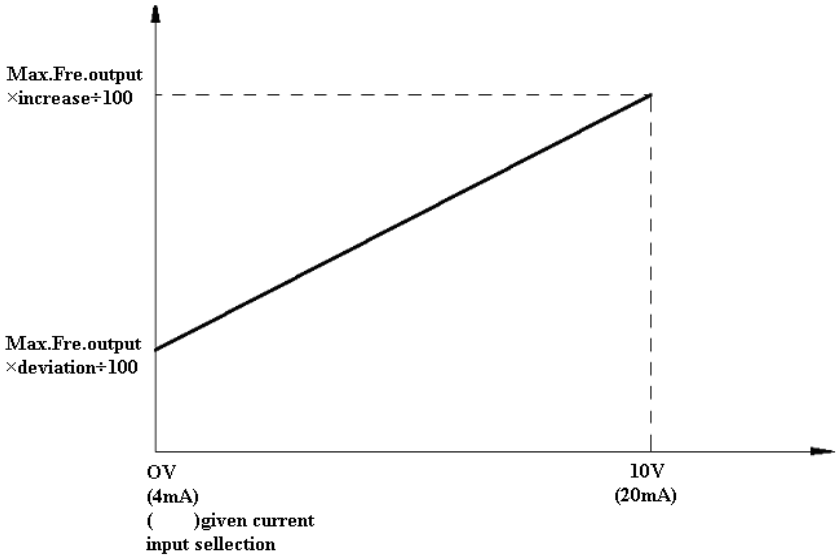
1：treat if inverter order reduces 90% with 400ms,inverter continue running in 80% of the pre-set value.

B18 Fre.increase	**setting limit**：0%～200%	factory value：100%
B19 Fre.deviation	**setting limit**：-100%～100%	factory value：0%

When frequency is input by simulate value through control circuit terminal FV and FI, appointe deviation and increase can be set related to the simulated input frequency.

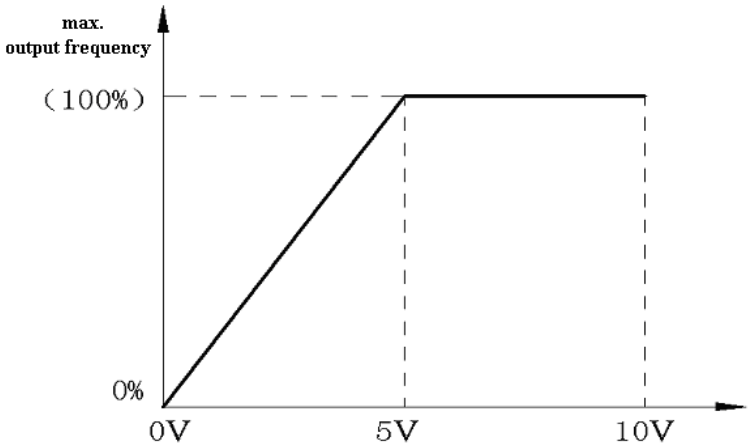
Frequency ouder increase：frequency order set by 1% unit simulate input value 10V(20mA) max.frequency output: 100%.

Frequency order deviation：frequency order set by 1% unit simulate input value 0V(4mA) max.frequency output: 100%.



●EXAMPLE：

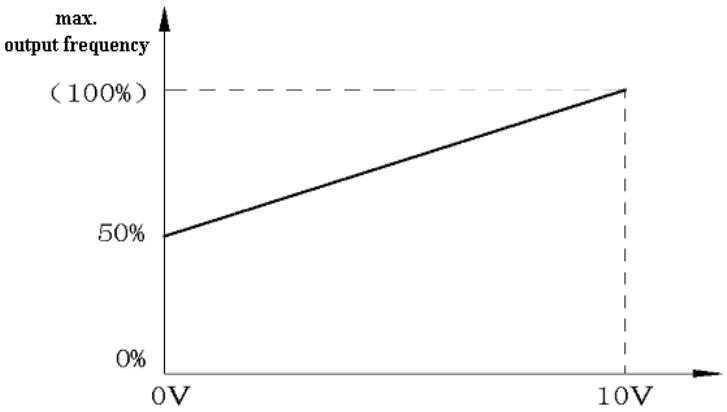
◇inverter runs in 0%-100% frequency order at 0-5V voltage input



increase：B18=200

deviation：B19=0

◇inverter runs in 50%-100% frequency order at 0-10V voltage input



increase：B18=100

deviation：B19=50

B20 F M A function	**setting limits**：0～3	factory value：0%
B21 F M A function	**setting limits**：0.01～2.00	factory value：1.00

For monitoring, output Fre. output and current output to simulate output terminal FMA-FC

F M A function：

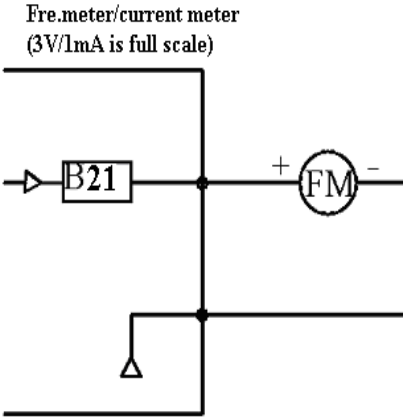
0：Fre.output（10Vmax.Fre.）

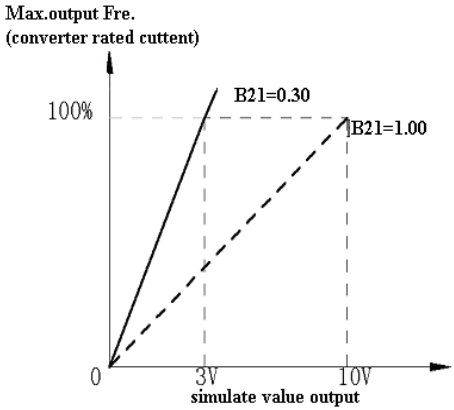
1：current output（10V inverter rated current）

2：power output（10V inverter rated current）

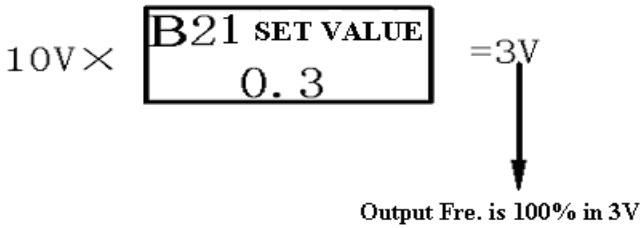
3：DC（10V/400V（200V grade），10V/800V（400V grade）

F M A increase：correct Fre. meter and galvanometer(B21) to adjust simulate output increase





●Set simulate output voltage in 100% Fre. output. Fre.meter showsl 0-60HZ in 0-3V



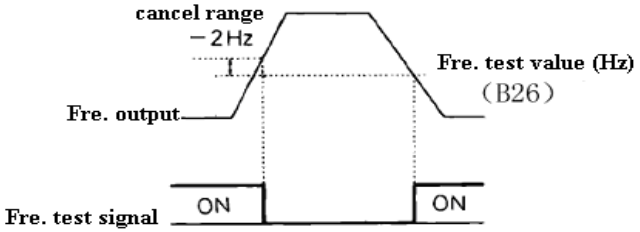
B22	**frequency test**	**setting limit**：0.00Hz～400.00Hz	factory value：0%
B23	**FAR value**	**setting limit**：0.00Hz～25.00Hz	factory value：0%

It is valid when multi-function joint input set to be “Fre.test”(set value: 4 OR 5)

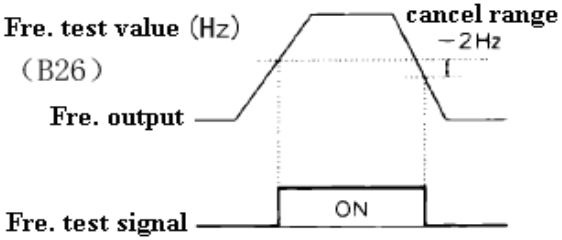
Frequency test：“frequency test” is functioning when output frequency is over or lower than frequency test standard B22.

FAR value：frequency test release width

●Fre. test mulit-function joint input set to be “4”（Fre. output≤Fre. test standard）



●Fre. test multi-function joint input set to be“5”（Fre.output≥Fre. test standard）



B24 G/P choose	**setting limits**：0～1	factory value：*

0: constant torque of G , over load of coefficient :150%1min

1: fan-type pumps of P , over load of coefficient:120%1min

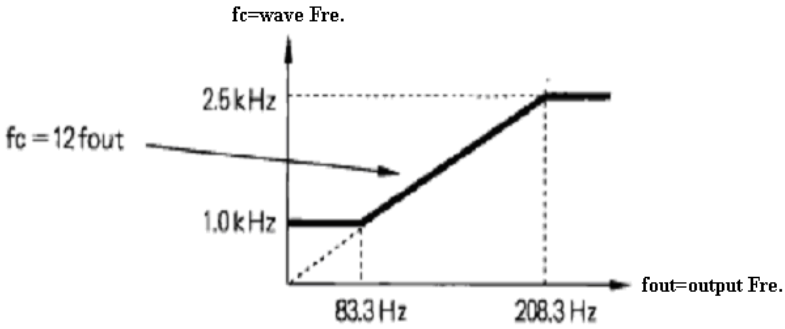
ATTENTION: when change this parameters, C18 will change following this. When 0 change to 1, the power of inverter more bigger.

C01 carrier wave frequency	setting limits：0～9	factory value：6

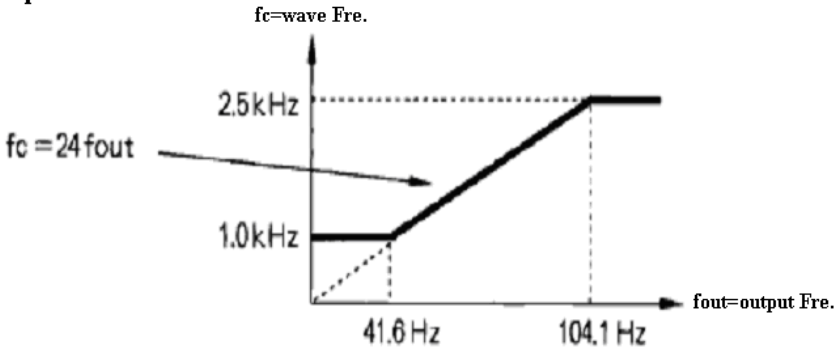
Set inverter output transistor ON/OFF frequency carrier wave

SET	CARRIER WAVE (KHZ)	METAL NOISE FROM MOTOR	DISTURB NOISE AND LEAKAGE CURRENT
7	12 Fout	big	less
8	24 Fout	↑	↑
9	36 Fout		
1	2.5		
2	5.0		
3	8.0		
4	10.0		
5	12.5		
6	15.0	small	more

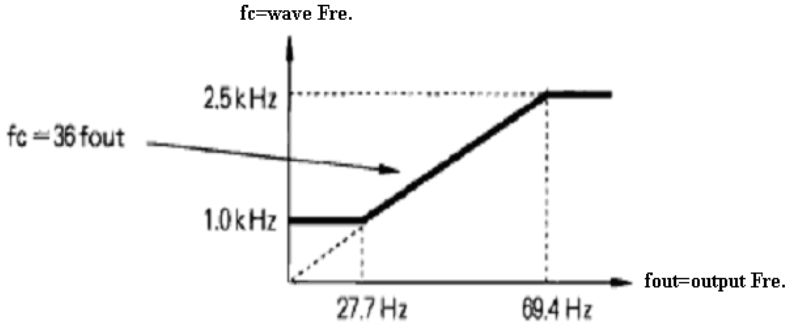
example: C01=7



example:C01=8



example:C01=9



C02 instant stop running	setting limit：0～2	factory value：0

0： Don't continue running.

1： Resume power during instant power off compensation time(C06),inverter continue running.

ATTENTION：keep running order to continue running from instant power off.

2： Inverter continue running when power is resume to normal value in control logic time,and there is no Uul, Uu3 error.

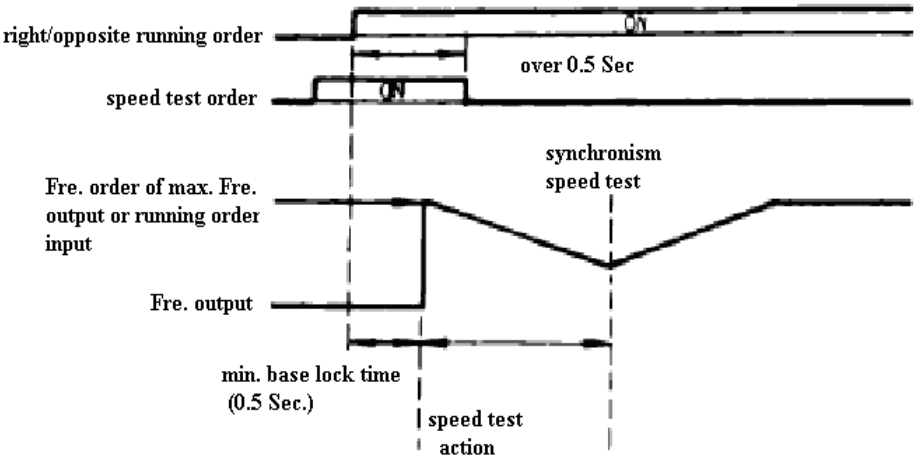
C03 searching speed	setting limits：0%～200%	factory value：110%
C04 lock time	setting limits：0.5S～5.0S	factory value：*

This order restart the sliding motor.This function enable motor to shift smoothly between working frequency and inverted frequency.

Speed search：speed search is setting current grade, inverter rated current is 100% .

Block time: during speed searching,set in dealing instant power off, the minimal time unit to switch off inverter is 0.1 SEC.

Select(constant B01~B07)： "17" (searching order from max.Fre.output)or "18" to be mulit-function joint input. Set up an order that makes inverter runs in right/opposite order after inverter searching appointed same period of time or later. If running orde is input before searching order,searching order is invalid. The following is the time figure when inputing searching order.



C05 search V/F	setting limits：0%～200%	factory value：*

Set decreasing standard of speed searching time V/F. During speed searching, V/F=(V/F during common running)×(C05).

C06 instant stop time	setting limits：0.0S～2.0S	factory value：*

Set compensation instant power off.

C07 auto-retry	setting limits：0～10	factory value：0

Set inverter self diagnose and restart times when error occours.

Set inverter re-start and error test resume after error occured. Auto diagnose and re-try times can be set to 10 times in C07. Inverter will auto re-start when the following errors occured.

1.OC（over-curent）

2.OU（over-voltage）

3. UV1（low voltage PUV）

4. GF（grounding error）

5. rr（braking transistor error）

ATTENTION： set to 0 for retry times in the following circumstance:

A．If there is no other errors occured 10 minutes after re-try.

B．Error resume signal is “ON” when error tested.

C．Power “OFF”.

C08 retry jiont	setting limits：0～1	factory value：0

Error selection during auto-retry:

0: “ON” , during error re-try

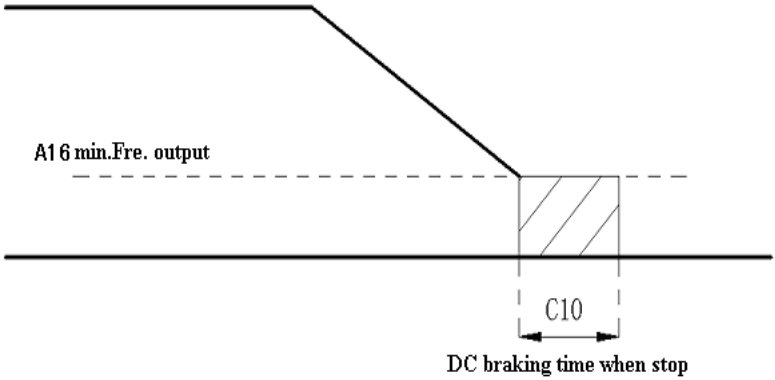
1: “OFF”, during error re-try

C09 braking current	setting limits：0%In～100%In	factory value：50%

Set DC current value when braking, inverter rated current is 100%

C10 stop braking	setting limits：0.0S～10.0S	factory value：0.5S

Set the DC braking time when inverter stops. If set to be 0.0S, inverter don't execute DC braking time, but output "OFF" when beginning braking.

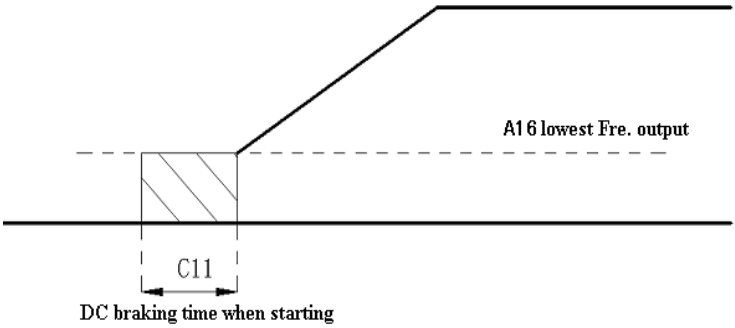


If stop mode(A05) selected to be slide to stop,inverter don't execute DC braking when inverter stops.

C11 start braking	setting limits：0.0S～10.0S	factory value：0.0S

DC braking time when starting

Enables motor to re-start from sliding to stop, set constant C09 DC braking time when starting. If constant C09 is set to be "0.0S", DC braking is invalid, inverter accelerate to start in min. Fre.output.

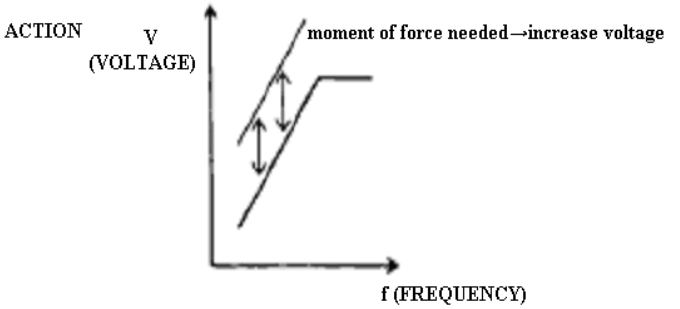


C12 rotating moment of force compensation	setting limits：0.0～3.0	factory value：1.0S

Auto rotation moment of force compensation

Motor rotation moment of force may be change according to the load capacity. Full scale rotation moment of force increase may adjust V/F mode voltage according to needs. SU4000 inverter adjust voltage automatically in constant and accelerating running speed.

voltage output∝ rotation moment of force cocmpensation(12) × rotation moment of force needed



Usually don't need to adjust rotation moment of force compensation(factory setting C12:1.0) Rotation moment of force need to be adjusted when connection wire between inverter and motor is too long or motor vibrating. Increase compensation to increase motor moment of force. But there will be problems if increase too much.

- Inverter run in unstable status because of motor over current.
- Motor overheat or vibration.

Check motor current when increasing moment of force compensation.

C13 wire resistance	setting limits：0.0R～65..530R	factory value：*
C14 motor iron loss	setting limits：0W～9999W	factory value：*

The moment of force data in inverter is pre-set already and don't need to change.

C15 rotation difference increase setting limits：0.0%～9.9% factory value：0.0%

Motor loading rotating moment of force difference lead to different motor speed. Rotation difference compensation is increasing inverter output frequency by propotion of motor loading capacity moment of force to decrease motor speed difference.

C16 empty load current setting limits：0%In～99%In factory value：30%In

Set motor current with empty load, motor rated current is 100%In

C17 correct delay setting limits：0.0S～25.5S factory value：2.0S

Set correct delay data in wave filtering.

C18 rated current setting limits：10%In～200.0%In factory value：*

Set rated current value for motor data plate, electronic overheat protector take it as motor protecting standard current.

C19 overload protection setting limits：0～4 factory value：1

Inverter inner overheat relay protects motor overheat.

Set correctly as follows：

0 ： not protected

1 ： standard motor （time constant 8 minutes）

2 ： standard motor （time constant 5 minutes）

3 ： inverter motor （time constant 8 minutes）

4 ： inverter motor （time constant 5 minutes）

Electronic overheat protection is monitoring motor temperature to protect it form overheat by simulate of inverter output current/frequency and time. When electron overheat relay is functioning it gives “OL1” report and cut off inverter output to avoid motor overheat. If there is only one motor connected to a inverter, external heat relay in not needed. If more than one motor is connected to a inverter, each motor need to install heat relay and set constant(C19)to be “0”.

C20 retard and speed loss setting limits：0 ～1 factory value：1

0：without speed loss protection function during retard

1：with speed loss protection function during retard

C21 accelerating standard setting limits：30%In～200.0%In factory value：*

Set speed loss protecting action standard with unit of 1% and inverter rated current 100%.

C22 running standard setting limits：30%In～200.0%In factory value：*

Set speed loss protecting action standard with unit of 1% and inverter rated current 100%.

C23 rotation moment of force test setting limits：0 ～4 factory value：1

0： without over moment of force testing
1： test only in constant speed, it continue running after testing
2： test during running, it continue running after testing
3： test only on constant speed, inverter is “OFF” after testing
4： test during running, inverter output “OFF” after testing

Set it to be 2 or 4 to test over rotation moment of force during accelerating or retard.
Set it to be 1 or 2 to keep it running after testing over rotation moment of force. Operator displays “OL3”(flashing) alarm during testing.
Set it to be 3 or 4 to temporary stop inverter during over rotation moment of force testing. Operator displays “OL3” error(light on) during testing.

C24 rotation moment of force standard setting limits：30%In～200.0%In factory value：160%

Over rotation moment of force test standard: set over rotation moment of force testing current standard with unit of 1%.

C25 over rotation moment of force setting limits：0.1S～10.0S factory value：0.1S

Over rotation moment of force testing time:If the time of motor current surpassing rotation moment of force testing standard(C24) is longer than testing time(C25),over rotation moment of force testing function works.

C26 SPI standard	setting limits：1%～100%	factory value：7%

Set input phase missing test grade, with unit of 1%, DC400V (200V grade) and DC800V(400Vgrade) to be 100%.

C27 SPI delay	setting limits：2～255	factory value：8

Input phase missing test time test time=1.28sec×（C27's value）

C28 SPO standard	setting limits：1%～100%	factory value：0%

Set output phase missing test grade, with unit of 1%, inverter rated current to be 100%.

C29 SPO delay	setting limits：0.0S～2.0S	factory value：8

Set phase missing test time

C30 power selection	factory value：*

Read only,display inverter power grade

C31 time select	setting limits：0 ～1	factory value：1

0：total time of power on

1：total time for running

C32 timer L	setting limits：0H ～9999H	factory value：0H
C33 timer H	setting limits：0 *10000H～27*10000H	factory value：0*10000H

When C32 is selected to be action total time, set C32 to be time with unit of 1 hour, and calculate time from then on.

D01	PID selection	setting limits：0 ～3	factory value：0

0：without PID control
1：with PID control(D controls deviation)
2：with PID control(D controls feedback value)
3：with PID control(feedback value is in opposite direction)

●Set target value：

SU4000 inverter can select several target value. Use voltage signal of control circuit terminal FV or frequency order data A27-A34 to set target value.

◇voltage signal of control circuit terminal FV: select(A03) to be 2 or 3 to set running direction.

◇frequency order data(A27-A34): sellect(A03) to be 0 or 1 to set running direction (combination of multi-function joint, multi-pace speed order and jog/start order)

●Set feedback value：

Use current signal(4-20mA) or voltage signal(0-10V) of control circuit terminal to set feedback value.

◇Current signal of control circuit terminal FI: select(B15) to be 1 to set FI function.

◇Voltage signal of control circuit terminal FI: select(B15) to be 0 to set FI function (set PC board SW1-1to OFF)

D02	feedback increase	setting limits：0.00 ～10.00	factory value：1.00
D03	propotion increase	setting limits：0.0 ～10.0	factory value：1.0
D04	integral time	setting limits：0.0S ～100.0S	factory value：10.0S
D05	differential time	setting limits：0.00S～1.00S	factory value：0.00S
D06	PID deviation	setting limits：-109%～109%	factory value：0%
D07	integral limits	setting limits：0% ～109%	factory value：100%
D08	wave filting time	setting limits：0.0S～2.5S	factory value：0.0S

Feedback increase：small adjustment for PID feedback test value.

Proportion increase：set P control proportion increase. If set to be 0.0, no P control.

Integral time：set I control proportion increase. If set to be 0.00, no I control.

Differential time：set D control proportion increase. If set to be 0.0, no D control.

PID deviation：deviation adjustment to frequency order control by PID, with unit of 1%.

Integral limits：set the up limits value of frequency output controlled by I, with unit of 1%.

Wave filting time：set the one time delay data of frequency order controlled by PID.

D09 feedback test	setting limits：0 ～1	factory value：0

Test feedback lost（PID）：

0：feedback lost test with PID

1：feedback lost test without PID

D10 standard lost	setting limits：0% ～100 %	factory value：0%

Feedback lost test standard(PID), set losing grade of PID feedback with unit of 1%.

D10 time lost	setting limits：0.0S～25.5S	factory value：1.0S

Delayed feedback lost time(PID), set testing PID feedback lost time.

Attention： Resume value I to O in the following circumstance

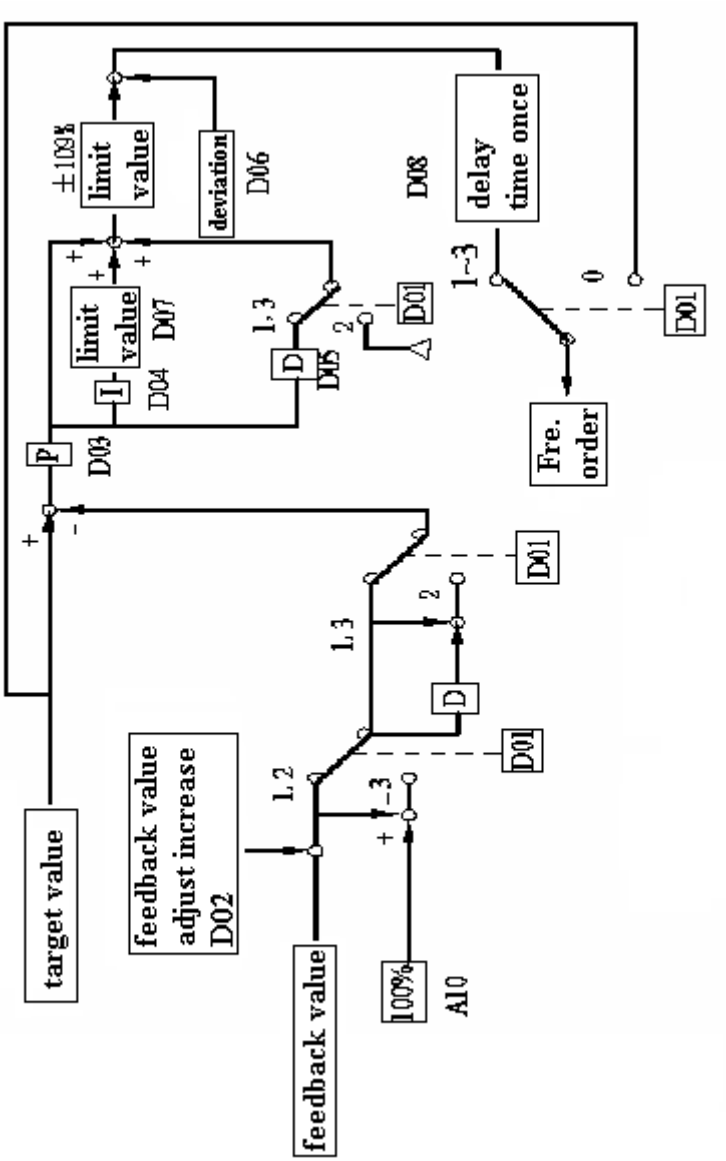
A、Order input stopped or stopping.

B、When inputting integral value resume signal with multi-function joint terminal(set any one of constant B01-B07 to be 20).

The upper limit of I can be set by constant D07. Increase value of constant D07 can improve integral control. If control system vibrating can not be stop by adjust integral time or delay data, just decrease constant D07.

PID control can be cancel by signal from multi-function joint input.

Set any one of constant B01-B07 to be 21, and switch on this joint during running, PID is cancelled . The anticipated value signal is used as frequency order signal.


target value
feedback value
adjust increase
D02
feedback value
100%
A10
1.2
-3
1.3
2
D
D01
P
D03
I
D04
limit
value
D07
±109%
limit
value
deviation
D06
D08
delay
time once
1~3
0
Fre.
order

E01 energy saving selection	setting limits：0～1	factory value：0
E02 energy saving increase	setting limits：0.00～655.00	factory value：*
E03 60Hz voltage	setting limits：0～120%	factory value：25
E04 6Hz voltage	setting limits：0～25%	factory value：12

Energy saving selection：

0：energy saving control invalid

1：energy saving control valid

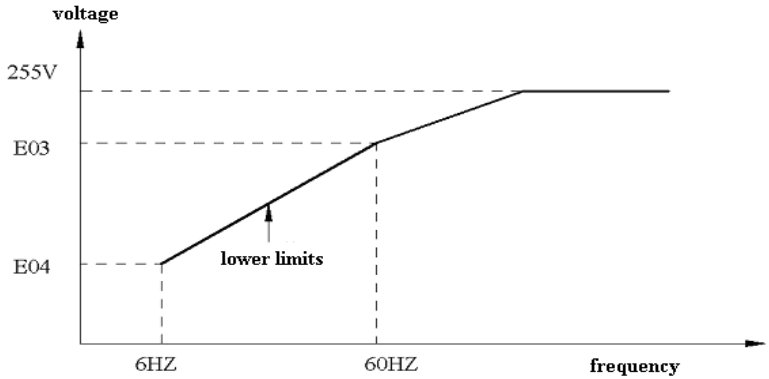
The constant used in energy saving control mode is pre-set to be best in factory. It is no need to be adjusted in normal running. If the motor property is different from SU4000 standard motor, please change the constant according to the following illustration.

Energy saving coefficient（E02）：

Use energy saving coefficient in energy saving running mode to calculate the best effective voltage, and input it as given voltage. This value is pre-set by factory according to SU4000 standard motor data. Input voltage increase with energy saving coefficient.

Energy saving voltage lower limits value（E03，E04）：

Set voltage output lower limits value. If the given voltage value is smaller than the appointed lower limits value in energy saving mode, then this lower limits value is taken as given voltage output value. Set lower limits value to avoid speed loss in light load capacity. Set voltage limits in 6Hz or 60Hz voltage outside 6Hz and 600Hz is set by linear with the percentage of motor rated voltage.



※ For 400V grade, this value is 2 time of 200V.

E05 calculating time	**setting limits**：1～200	factory value：1

Set average power calculating time in energy saving mode.

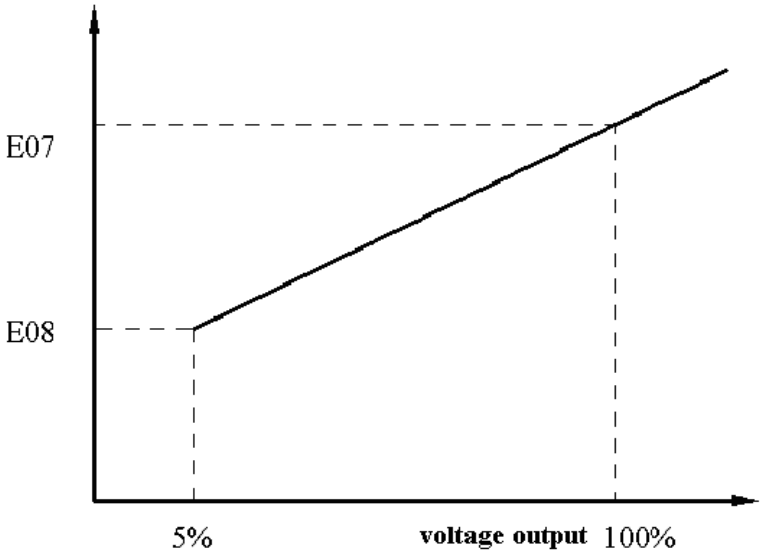
E06 voltage limits value	**setting limits**：0～100%	factory value：0%
E07 100% anti-jump	**setting limits**：0.1～10.0%	factory value：0.5%
E08 5% anti-jump	**setting limits**：0.1～10.0%	factory value：0.2%

In energy saving control mode, best voltage is calculate according to the load capacity power. But, the data set is change with temperature or motor from other factory. So,it can not offer best voltage in certain circumstance. Best running is achieved through minimum voltage adjustment.

Voltage limits value：control voltage through best running. Set with the percentage of motor rated voltage. It can not be set if set percentage to be 0.

The best running voltage range（E07，E08 ）：

Set a best voltage changing range in a best running circle. It is set with the percentage of motor rated voltage. Increase this value,motor speed increase. This voltage range is set in start voltage 100% and 5%. Other voltage value can be set through linner value.



F01	**local add**	**setting limits**：0～31	factory value：0
F02	**baud**	**setting limits**：0～3	factory value：1
F03	**odd/even number test**	**setting limits**：0～2	factory value：1

Local add：

0：inverter break away from RS485 general control address, non controlled address.

1～31：controlled address of inverter RS485 communication.

It is necessary to set controlled address to avoid number repeat with other controlled address in the same transmitting wire.

band：

0：2400BPS

1：4800BPS

2：9600BPS

3：19200BPS

odd/even number test：

0：without odd/even number test

1：even number test

2：odd number test

F04	**transmitting run time**	**setting limits**：0～1	factory value：1

Set run-time test with PC communic ation：

0：without run-time test

1：with run-time test

F05	**C E stop**	**setting limits**：0～3	factory value：1

Way to stop when communication error(EC)：

0：retard to stop(with retard time1)

1：slide to stop

2：retard to stop(with retard time2)

3：continue running(alarm)

F06 O H stop	setting limits：0～3	factory value：3

Stop way when radiator overheat：

0 ： retard/stop 1(error)

1 ： free stop

2 ： retard/stop2(error)

3 ： continue running(alarum)

F07 DBR over heat	setting limits：0～1	factory value：0

Braking resistance overheat protection function：

0： without resistance overheat protection

1： with resistance overheat protection

F08 L / R function	setting limits：0～1	factory value：1

0 ： LOCAL/REMOTE key function: invalid

1 ： LOCAL/REMOTE key function: valid

F09 L / R sellection	setting limits：0～1	factory value：1

0：When LOCAL/REMOTE shifting, re-run is valid when stop order is inputed

1：When LOCAL/REMOTE shifting, re-run is valid at once

F10 enter key	setting limits：0～1	factory value：1

0 ： STOP key is always valid in any operating mode

1 ： STOP key is valid when operator is running within operator running order

F11 enter key	setting limits：0～1	factory value：1

0 ： “ENTER” key not used when set frequency order with operator

1 ： “ ENTER” key used when set frequency order with operator

F12 Variable Selection	setting limits：0～2	factory value：0

This function code only in LCD controller

0: m/s

1: Mpa/mm²

2: Kg/ mm²

Pr-F12 fre set select	setting limits：0～1	factory value：0

This function code only in LED controller

Fre. set by key button number

Fre. set by key potentiometer adjustment

F13 LCD brightness	setting limits：0～10	factory value：4

This function code only in LCD controller

Usd to adjust the brightness of LCD display

Pr-F13 data rewrite	setting limits：0～2	factory value：0

This function code only in LED controller

0: Data copy

1: Data proofreading

2: Data inwrite

F14 monitoring select	setting limits：0～6	factory value：0

This function code only in LCD controller

0: setting frequency

1: output frequency

2: output current flow

3: voltage output

4: power output

5: voltage EDC

6: feedback PID

Pr-F14 monitoring select	setting limits：0～10	factory value：0

This function code only in LED controller

0: output frequency

1: setting frequency

2: voltage output

3: output current flow

4: power output

5: voltage EDC

6: temperature

7: S terminals functional

8: Y terminals functional

9: running time

10: version ROM

G01 error history1	setting limits：read only	factory value：-
G02 error history2	setting limits：read only	factory value：-
G03 error history3	setting limits：read only	factory value：-
G04 error history4	setting limits：read only	factory value：-

These function code only in LED control panel,they displays the 4 history errors before power off.

Attention：* means that factory value is set according to inverter power.

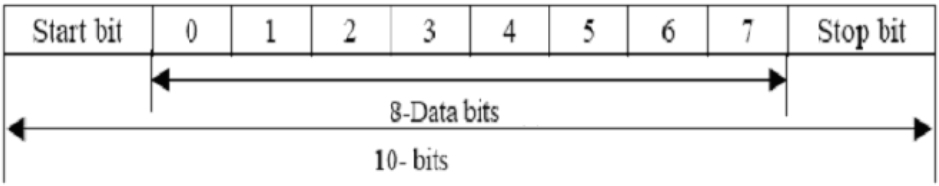
SU4000 SERIES MODBUS COMMUNICATION PROTOCOL

When using RS485 interface,communication position of each frequncy inverter should be set up,then the computer control according to spcific position of each frequncy inverter.

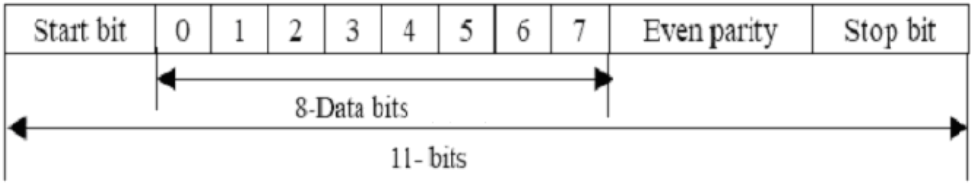
1：This communication protocol is RTU（Remote Termonal Unit）mode，each 8-bit data is composed by two 4-bit hexadecimal character,such as 64H.

2: Communication data way.

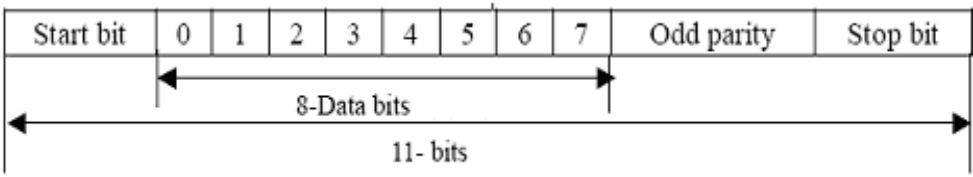
8N1 For RTU F03=0



（2） 8E1 For RTU F03=1



（3） 8O1 For RTU F03=2



3：communication data format.

RTU communication data format.

<50ms	ADDR	W/R	FUNC	DATAL	DATAH	CRC	<50ms

⑴Mute：means the serial port is broken in 50ms.

⑵ADDR：communicaton position:8-bit.

00：broadcast way is MODBUS.

01~31：corresponding inverter address.

⑶W/R：read/write command function-setting，read command：A3H，write command：3AH.

⑷FUNC：command code:8-bit command.

⑸DATAL：16-bits data low-8-bit.

⑹DATAH：16-bits data high-8-bit.

⑺CRC：detecting faulty value

RTU mode detects the faulty value by CRC（cyclical Redundancy Check）.CRC detects faulty value by steps as follows:

⑴Imput a 8-bit temporary-storage device with a content 00H（called CRC temporary-storage device）

⑵Add the command information 1~5 bits group to bits group of CRC8-bitCRC temporary-storage device,and put the result into CRC temporary-storage device.

For example：

A、read the data of No.01 device whose funcition code is 01,CRC code is 0A5H

01 A3 01 00 00 A5.

B、write 5000 as the data of No.01 device whose function code is 12 ,CRC code is 0E2H

01 3A 0C 88 13 E2.

4、read data

Format：

ADDR R FUNC 00 00 CRC

When ADDR=0，no return data

When ADDR≠0 and according to inverter address,there will be response

When the return is normal,the format will be：

01 R FUNC Datal Datah CRC

5、write data

Format：

ADDR W FUNC Datal Datah CRC

When ADDR=0，be used as broadcast,can be set,but without response.

When ADDR≠0 and according to inverter address,there will be response

When the return is normal,the format will be：

01 W FUNC Datal Datah CRC

6、control command

Format：

ADDR W 0A6H Datal Datah CRC

When ADDR=0，it's broadcast，without return response

When ADDR≠0 and according to inverter address,there will be response

When the return is normal,the format will be：

ADDR W 0A6H Datal Datah CRC

DATAL：

.7	.6	.5	.4	.3	.2	.1	.0
		=1 transfer the output note bit to inverter=0 ineffective	=1 transfer the output note bit to inverter=0 ineffective	=1transfer fault reset command to inverter =0 ineffective	=1transfer ”external fault” bit to inverter =0 ineffectiv	=1 inverter is at inverted running status =0 inverter is at normal running status	=1inverter start running =0inverter stop running
NC	NC	Do2	Do1	RESET	EF0	REV	RUN

DATAH：

.7	.6	.5	.4	.3	.2	.1	.0
NC	NC	NC	NC	NC	NC	NC	NC

Function code table:

Decimal representation-function instruction

;001*-parameter selection 0-60000

;002*-operating way 0-8

;003*-imput votage 1500-2550*

;004-stop way 0-3

;005*-power supply phase 0-1

;006*-reverse forbidden 0-1

;007-L/R function key 0-1

;008-stop key 0-1

;009-frequency-setting comfirm key 0-1

;010*-V/F selection 0-255

;011*rated voltage 1500-2500*

;012*-Max freqency 5000-40000

;013*-Max voltage 1-2550

;014*-reference frequency 20-40000

;015*-intermediate frequency 10-3999

;016*-intermediate voltage 1-2550

;017*-starting frequency 10-1000

;018*-starting voltage 1-500

;019-first acceleration 0-36000

;020- first deceleration 0-36000

;021-second acceleration 0-36000

;022-second deceleration 0-36000

;023-third acceleration/additional command 0-36000

;024- third deceleration/additional command 0-36000

;025- forth acceleration/additional command 0-36000

;026- forth deceleration/additional command 0-36000

;027*-curve selection 0-3

;028-display mode 0-3999

;029-main frequency 0-4000

;030-multistep Hz2 0-4000

;031- multistep Hz3 0-4000

;032- multistep Hz4 0-4000

;033-multistep Hz5/additional command 0-4000

;034-multistep Hz6/ additional command 0-4000

;035-multistep Hz7/ additional command 0-4000

;036-crawl frequency 0-4000
;037/step1mode additional command 0-65535
;038/step2mode additional command 0-35535
;039/step3mode additional command 0-65535
;040/step4mode additional command 0-65535
;041/step5mode additional command 0-65535
;042/step6 mode additional command 0-65535
;043/step7 mode additional command 0-65535
;044-upper limit frequency 0-100
;045- lower limit frequency 0-100
;046-rated current 0-65530
;047-overload protection 0-4
;048-OH stop way 0-3
;049*-S2function 0-26
;050*-S3function 2-26

;051*-S4function 2-26
;052*-S5function/additional command 2-26
;053*-S6function/additional command 2-26
;054*-S7function/additional command 2-26
;055*-S8function/additional command 2-26
;056*-S9function 2-26
;057*-S10function 2-27
;058*-30ABCfunction 0-18
;059*-Y5ACfunction 0-18
;060*-Y1function/additional command 0-18
;061*-Y2function/additional command 0-18
;062*-Y3function/additional command 0-18
;063*-Y4function/additional command 0-18
;064*-main anologue quantity 0-1
;065*- subsidiary anologue quantity 0-1

;066-frequency reservation 0-1
;067-frequecny loss 0-1
;068-frequency gain 0-200
;069-frequency offset -100-100
;070-FMAfunction 0-3
;071-FMA correction 1-200
;072*-intercarrier frequency 1-9
;073*-instant-stop way 0-2
;074*-speed search action reference 0-200
;075-Min time of base 5-50
;076*-speed search V/F reference 0-100
;077-instant-stop time 0-20
;078-retry automatically 0-10
;079-retry retry connection 0-1
;080-jump Hz1 0-40000
;081-jump Hz2 0-40000
;082-jump amplitude 0-25.00
;083-timing selection 0-1
;084-timer L 0-9999
;085-timer H 0-27
;086-brake current 0-100
;087-stopping brake 0-100
;088-starting brake 0-100
;089-torque compensation 0-30
;090-*resistance between lines 0-65530
;091-*core loss of motor 0-9999
;092-deceleration stall 0-1
;093-*acceleration reference 30-200
;094-*running reference 30-200
;095-frequency detection 0-40000
;096-torque detection 0-4

;097-*torque reference 30-200
;098-cross torque T 1-100
;099-on delay 0-255
;100-off delay 0-255
;101-DBR overheat 0-1
;102-fan control /additional command.5 0-1
;103-nc.6 0-1
;104-*SPI reference 1-100
;105-*SPI delay 2-255
;106-*SPO reference 0-100
;107-*SPO delay 0-20
;108-*PID selection 0-3
;109-feedback gain 0-1000
;110-rating gain 0-100
;111-intergration time 0-1000
;112-rate time 0-100
;113-PID offset -109-109
;114-intergration limit 0-109
;115-filtering time 0-25
;116-feedback detection 0-1
;117-loss reference 0-100
;118-loss time 0-255
;119-*energy-saving selection 0-1
;120-* energy-saving gain 0-65500
;121-*60Hz voltage 0-120
;122-*6Hz voltage 0-25
;123-*counting time 1-200
;124-*voltage limit 0-100
;125-100% antijump 1-100
;126-5% antijump 0.1-10.0
;127-tranfer overtime 0-1

;128-CE stop 0-3

;129-TEMP——SEL 0-1

;130-*local device address 0-31

;131-*Baud rate 0-2

;132-*parity detection 0-2

;133-slip gain 0-9.9

;134-no-load current 0-99

;135-augmenting delay 0-25.5

;136-LOC detection 0-1

;137-FAR frequency 0-25.00

;138-L/R key selection 0-1

;139- reservation（read&write forbidden）

;140-mode running way 0-7

;141-165 reservation（read&write forbidden）

;*166-control command

;#167-frequency setting

;#168-output frequency

;#169-output current

;#170-output voltage

;#171-output power

;#172-EDC voltage

;#173-PID feedback

;#174- reason for alarm

（1-25）

;*Uu1/*Uu2/*Uu3/**SC/**oC/**ou/**GF/*PUF/*oH1/*oH2/oL1/*oL2/*oL3/*EF0/*EF2/

*EF3/*EF4/*EF5/*EF6/*SP|/SPo/**CE/**rr/**rH/*oPr

;#175-reason for alarm in advance

;====================BIT_FUNC==========================

L.0=Uu alarm

L.1=ou alarm

L.2=OH1 alarm

L.3=OL3 alarm

L.4=BB alarm

L.5=EF alarm

L.6=SERR alarm

L.7=CALL alarm

;=====================BIT_FUNC============================

H.0=OH3

H.1=CE

H.2=OPE0

H.3=OPE1

H.4=OPE2 ra

H.5=OPE3

H.6=NC

H.7=NC

;=====================BIT_FUNC============================

;#176- fault history 1

;#177-fault history 2

;#178-ROM version

;#179-terminal imput

;=====================BIT_FUNC============================

L．0=S1

L．1=S2

L．2=S3

L．3=S4

L．4=S5

L．5=S6

L．6=S7

L．7=S8

;=====================BIT_FUNC============================

H．0=S9

H．1=S10

H．2=30ABC

H．3=Y5ABC

H．4=Y1

H．5=Y2

H．6=Y3

H．7=Y4

;======================BIT_FUNC==========================

;#180-running status

;======================BIT_FUNC==========================

L．0=running

L．1=inverted running

L．2=inverter ready

L．3=fault

L．4=crawl status

L．5=alarm in advance

L．6=NC

L．7=NC

;======================BIT_FUNC==========================

H．0=running way

H．1= running way

H．2= running way

H．3= running way

H．4= ENTER for imput when imputting frequency

H．5=NC

H．6=NC

H．7=NC

;======================BIT_FUNC==========================

;#181-radiator temperature

J、ERROR AND WAY TO SOLVE

1、error diagnose and correction：

●When an error is tested by us, it is displayed on the digital operator, and order the error joint output and motor to stop. Check the error reason and way to correct in the following sheet.

●If the error or suggested correction way don't work, contact us directly.

●In order to restart, connect re-set input signal or press **ESET** key, or break off the main circuit one time to re-set.

●If you need to change the data in the error sheet, press**SELECT** key to change.

Attention： inverter don't receive error resume signal when inputing right/opposite running order. Resume when right/opposite running order is OFF.

Figure 10-1 error diagnose and correction

error display	illustration	detail	error correction
Uu1	Low voltage in main circuit	Low voltage of main circuit during running. Test voltsge: about 190V or lower for 200V grade, 380V or lower for 400V grade.	●check power connection wire. ●improve input voltage.
	Low voltage in control circuit	Low voltage of control circuit during running.	
	Connector error	Break off the connector power transimitted prior during running.	
OC	Over current flow（OC）	Inverter output current over OC value.	●checkl motor coil resistance. ●prolong accelerate/ retard time ●check motor insulation ●check with multimeter

J、ERROR AND WAY TO SOLVE

Error display	illustration	detail	Correct error
oU	Over voltage （ OU）	main circuit DC voltage over OU value test voltage: 200V grade: about 400V 400V grade: about 800V	Prolong retard time increase braking resistance.
GF	Grounding error （GF）	Inverter ground output current over inverter rated current 50%	Check wire insulation between inverter and motor.
FB	Main circuit error（FB ）	●DC circuit fuse is broken ●output transistor broken	Check broken transistor, loading capacity short circuit grounding.
◎oH1	Radiator overheat （ OH1 ）	Transistor radiator temperature is over allowed value(radiator temperature≥OH1 test value) (about 95℃)	Check exhaust fan and the surrounding temperature.
oH2	Radiator overheat （ OH2 ）	Transistor radiator temperature is over allowed value(radiator temperature≥OH2 test value) (about 105℃)	Check exhaust fan and the surending temperature.
oL1	Motor overload （ OL1 ）	Inverter over motor overload capacity value	Reduce load capacity.
oL2	Motor overload （ OL2 ）	Inverter output current is over motor overload capacity value	Reduce load capacity prolong accelerating time.
◎oL3	Over rotation momentof force testing （ OL3 ）	Inverter output current is over rotation moment of force testvalue	Reduce load capacity prolong accelerating time.
EFLn	Error from RS485 general data wire	Error in control circuit	Check external control circuit.
EF2~8	External error of terminal S2-S8	Error in external control cicuit	Check input terminal, if terminal is not connected and displays error signal, change inverter.

Error display	illustration	detail	Error correction
SPI	Current fluctuate too much	●inverter power input lack phase. ●unstable in input voltage	●check power in voltage. ● re-tighten the input terminal screw.
SPo	Output lack phase	Inverter output lack phase.	●check output wire. ●check motor impedance. ● re-tighten the input terminal screw.
◎CE	MEMOBUS transmition error	RS485 control data not received normally.	Check transmition facility or signal.
rr	Braking transistor error	Braking transistor action problem.	Change inverter.
rH	Braking reactor component overheat	Supass braking reactor temperature over allowance.	Low down load capacity.
Err	Control circuit error 1（ERR）	Can not build connection between inverter and digital operator 5 seconds after power is on. MPU external componet error(innitial).	●input digital operator,connector. ●check control circuit wire. ●change control insert board.
EPF	EEPROM error （EPF）	Inverter control. Component error.	Change control insert board.
ADF	CPU A/D inverter error （ADF）	Inverter control. Component error.	Change control insert board.

◎：means stop mode selectable in errors.

2、alarm display and illustration

Alarm and stop output in error terminals,inverter rusume to the original running status when error removed. The following figure illustrates alarm meanings.

Figure 10-3、alarm display and illustration

display	Content	illustration
Uu	pressure enduring test	Not enough voltage tested when inverter stops.
oU	overvoltage in stopping	Main circuit EDC voltage surpass overvoltage test standard when inverter stops.
oH1	radiator overheat	Select test in circumstance of radiator temperature≥OH1 test standard,inverter continue running.
oL3	over rotation moment of force test	When inverter output current＞C24（overrotation moment of force test standard）, sellect over rotation moment of force, inverter continue running.
bb	outside B B	External BB order input from control circuit terminal.
EF	light/opposite running order error	It is OFF when right/opposite running order input over 500ms.
CALL	RS485 transmition waiting	In circumstance of A03(operation mode sellection) ≥4, inverter can not receive data flow from RS485 when power is on.
oH3	inverter overheat alarm	Inverter overheat alarm signal input from control circuit terminal.
CE	RS485 transmition error	Sellect continue running when RS485 transmition error data transmition break down.
oPE0	KVA setting error	Inverter KVA setting error.
oPE1	multi-function joint input setting error	Multi-function joint input terminal（B01-B07） has the following errors. ●Set 2 or more same value. ●Set 17 and 18 in same time. ●Set 24 and 27 in same time.
VFE	V / f data setting error	A10-A16 (V/F data) setting error.
PAF	Data setting error	●inverter rated current×0.1＞（C18）motor rated current or C18＞inverter rated current×2 ● A37(jump Fre. 1)≥A38(jump Fre.2)－A39(jump Fre.extent) ●A35 (output Fre. up limits) ＜A36 (output Fre.lower limits) 。

3、Motor error and solving measure

●If there is errors occours with the motor, check and take relative silving measure.

●Please contact us if the following measures does not work.

Figure 10-2. motor error and solving measures

error	checking content	solving measures
Motor does not run	Voltage is on terminal R，S，T or not	●switch power on ●cut off power and switch on again ●check voltage ●be sure terminal screw is tightened
	Use rectifier voltage meter to test voltage of output terminal U，V，W	Cut off power and switch on again
	Whether motor is locked because of overload	Reduce load capacity and remove lock
	If there is error displays on the operation display screen	Check error sheet
	Is the right/opposite running order inputed or not	Check connecting wire
	Is the Fre. given voltage inputed or not	●correct connection wire ●check Fre. given voltage
	Is the running way set correct or not	Input correct setting
Motor runs in opposite direction	Whether connecting wire of terminal U,V,W is right or not	Connect to the relative motor phase wire U,V,W
	Is the running signal of FWD and REV inputed	Correct connection wire
Motor runs but can not change speed	Whether connecting wire of Fre. given circuit is correct or not	Correct connection wire
	Whether running mode setting is correct	Use selecting of running check mode
	Whether load capacity is too much	Reduce load capacity

code	test content	way to solve
Motor running speed(revolution/Min.) too higher or lower	Motor rated value(voltage) right or wrong	Check data on the motor data plate
	Gear ratio/right or wrong	Check gearbox(gear,etc)
	Max.Fre.output/right or wrong	Check Max.Fre.output value
	Use rectifier voltage meter to test voltsge decrease between motor terminal	Check V/F propertity
Motor running in unstable status (revolution/Min.)	Overload or not	Decrease load capacity
	Load capacity shift too much	Decrease change of load capacity Increase inverter motor capacity
	Single or three phase power any phase lost in 3 phase power	●check any phase lost in 3 phase power ●connect AC reactor to power for single phase power

4、code sheet：

A	B	C	D	E	F	G	H	O	S	N	L	T	P	R	U
R	b	Cc	d	E	F	G	H	Oo	S	n	L	r	P	r	Uu

K、MAINTAINENCE

1、BASIC WAY TO CHECK AND MAINTAIN

BASIC WAY TO CHECK AND MAITAIN		
	1	don't touch the high-voltage terminal to avoid electric shock.
	2	Put on all the cover before transmiting power, be sure circuit power is off when take off the cover. Otherwise may cause electric shock.
	3	Check and maintain after main circuit power is off for 10 minutes and the voltage in main circuit is lower than 36V. There is electricy on the capacitor and is dangerous.
	4	●Only qualified person can maintain, check and chang parts. ●Remove all metal material such as wrist watch and ring before operation use insulating tools. Otherwise any cause electric shock.
	1	Use CMOSIC to be control PC board, don't touch CMOS component, CMOS component can be destroyed by static electricity easily.
	2	Don't connect or disconnect the wire and connector when power is on. Otherwise may cause electric shock.

2、REGULAR CHECKITEM

To avoid SU4000 errors and ensure long time high quality running, please check the follwing items regularly. Check after 10 minutes when cut off main circuit power and be sure mian circuit voltage is lower than 36V.

●Be sure power voltage is same as inverter (be sure there is no broken on wire and motor).

●Is connecting terminal and connector loose (no break on wire and terminal wire).

●No dust and iron ends and corrosive liquid or oil inside inverter.

●Not allowed to test inverter insulating impedance.

●Check inverter output voltage, current and frequency (too much difference is not allowed).

●Surrounding temperature to be within －5℃～40℃, be well ventilated.

●No abnormal sound and vibration(inverter can not be installed in vibrating environment).

●Keep heat radiator and air vent clean, check exhaust fan regularly.

L、CHOSING MATCHING FACILITY

1、 Braking resistance sheet

Inverter type	Resistance spec		Braking moment of force %	Suitable motor /KW G	Suitable motor /KW P
	Power W	Resintance value Ω			
SU400D4G23A	80	200	125	0.4	-
SU40D75G23A	100	200	125	0.75	-
SU401D5G23A	300	100	125	1.5	-
SU402D2G23A	300	70	125	2.2	-
SU40D75G43A	80	750	125	0.75	-
SU401D5G43A	300	400	125	1.5	-
SU402D2G43A	300	250	125	2.2	-
SU403D7G43A	400	150	125	3.7	-
SU405D5G07D5P43A	500	100	125	5.5	7.5
SU407D5G0011P43A	1000	75	125	7.5	11
SU40011G0015P43A	1000	50	125	11	15
SU40015G18D5P43A	1500	40	125	15	18.5
SU418D5G0022P43A	4800	32	125	18.5	22
SU40022G0030P43A	4800	27.2	125	22	30
SU40030G0037P43A	6000	20	125	30	37
SU40037G0045P43A	9600	16	125	37	45
SU40045G0055P43A	9600	14	125	45	55
SU40055G0075P43A	12000	10	125	55	75
SU40075G0090P43A	18000	7	125	75	90
SU40090G0110P43A	18000	7	125	90	110
SU40110G0132P43A	18000	7	125	110	132
SU40132G0160P43A	36000	3.5	125	132	160
SU40160G0185P43A	36000	3.5	125	160	185
SU40185G0220P43A	36000	3.5	125	185	220
SU40220G0250P43A	48000	3	125	220	250
SU40250G0280P43A	48000	3	125	250	280
SU40280G0315P43A	48000	3	125	280	315
SU40315G0350P43A	48000	3	125	300	350

※Inverterof 220V grade and specification below 400V/22KW need to install braking resistance to get quick braking.

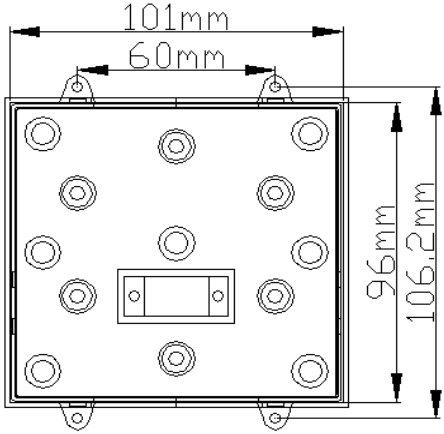
※Inverter over 400V grade 22KW need to install braking chip to get quick braking.

Attention:

- ●Select the resistance value and frequency from our company.
- ●We don't bear any responsibility of inverter damage if braking resistance and chip used is not from our company.
- ●Please check the safety and inflammable environment when install braking resietance.
- ●If you want to change the resistance value and power do contact your supplier.
- ●You should order braking resistance and chip with your local supplier.

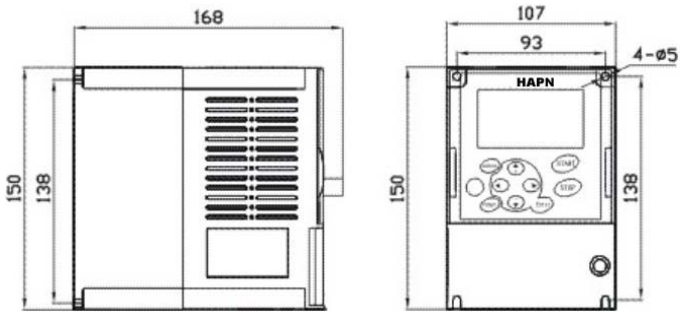
M、APPENDLX

1、operator base size：

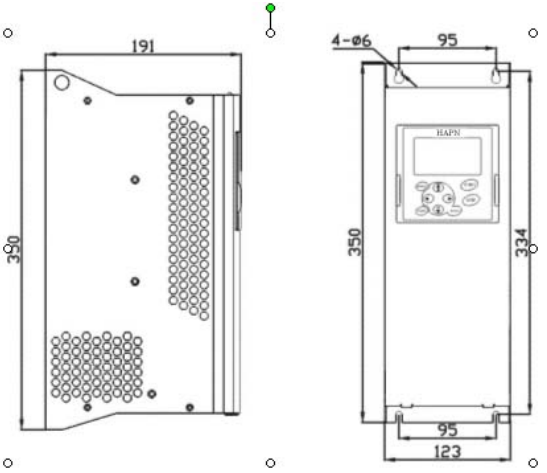


2、inverter external size and install size：

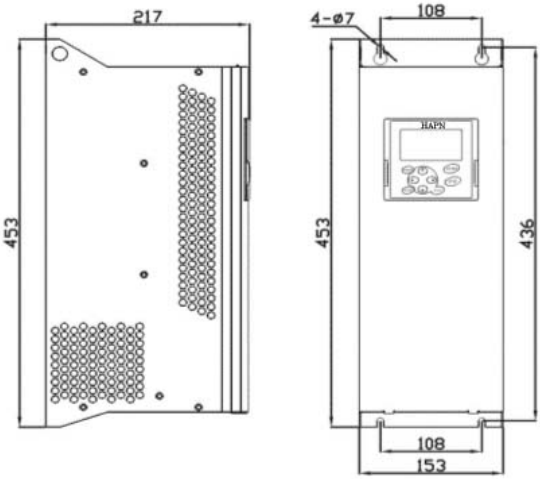
2.1、SU400D4G23A~ SU403D7G43A



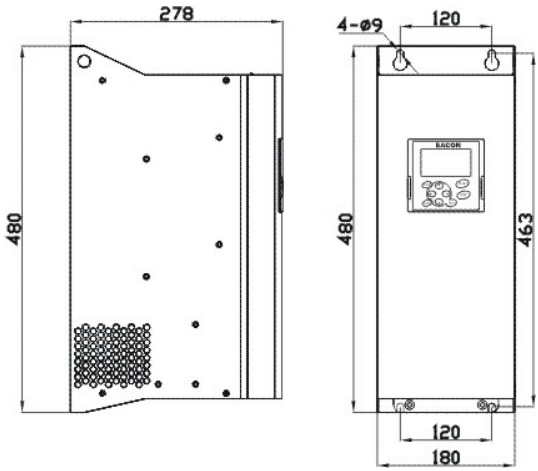
2.2、SU405D5G07D5P43A ~SU407D5G0011P43A



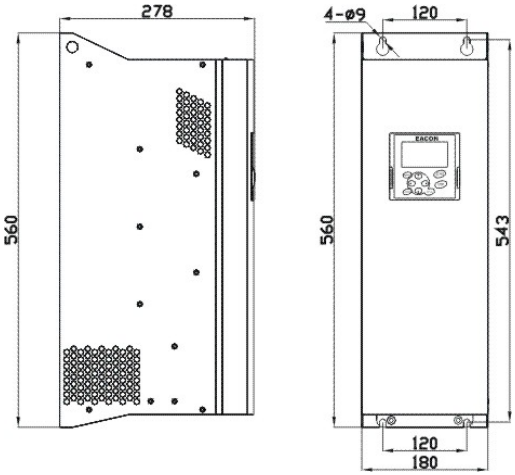
2.3、SU40011G0015P43A~ SU40015G18D5P43A



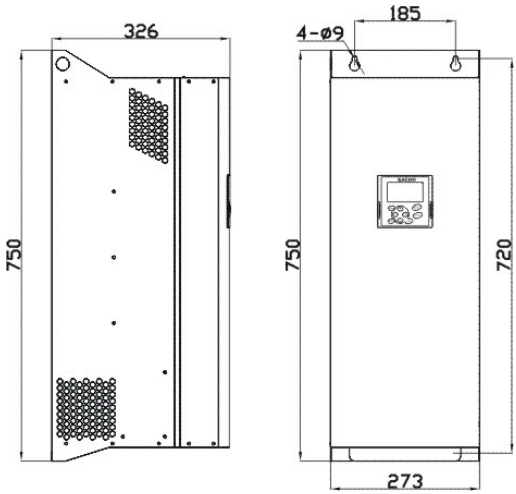
2.4、SU418D5G0022P43A~ SU40022G0030P43A



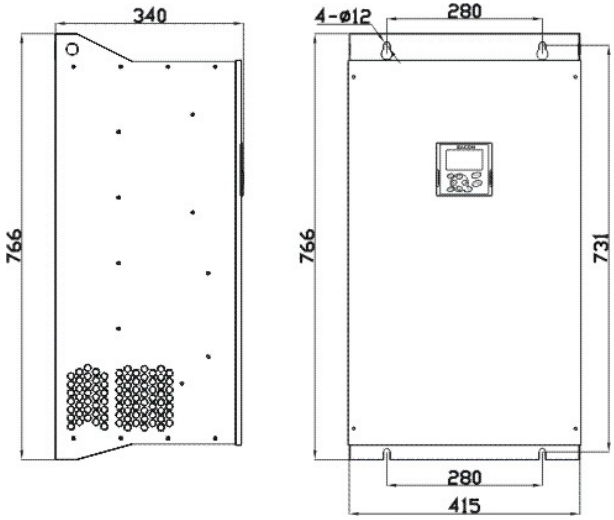
2.5、SU40030G0037P43A~ SU40037G0045P43A



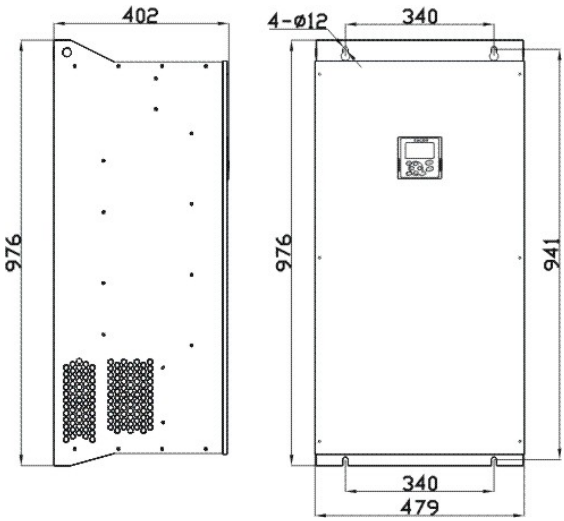
2.6、SU40045G0055P43A~ SU40055G0075P43A



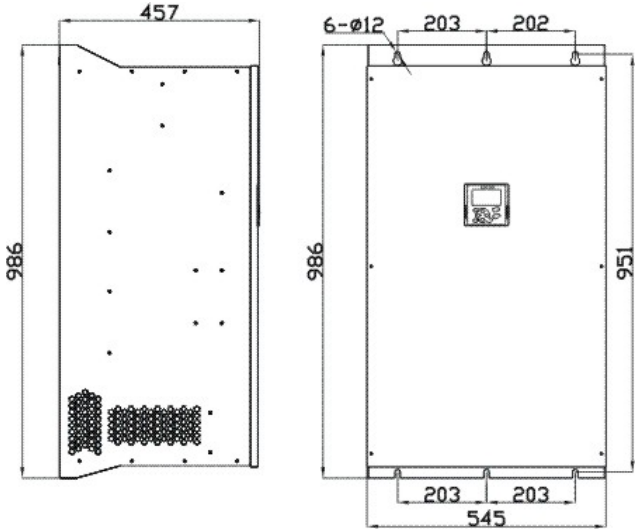
2.7、SU40075G0090P43A~ SU40090G0110P43A



2.8、SU40110G0132P43A~ SU40132G0160P43A



2.9、SU40160G0185P43A~ SU40185G0220P43A



2.10、SU40220G0250P43A~ SU40315G0350P43A